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AMERICAN JOB
BOOK BINDERY
222 W. RANDOLPH ST.
CHICAGO

918/8

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 112,

SEWING AND EMBROIDERING.

PERIOD—A.D. 1897-1900.

LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
BY DARLING & SON, LTD., 34-40, BACON STREET, E.
PUBLISHED AT THE PATENT OFFICE, 25, SOUTHAMPTON BUILDINGS,
CHANCERY LANE, LONDON, W.C.

1903.

EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. For further information as to the classification of the subject-matter of inventions, reference should be made to the *Abridgment-Class and Index Key*, published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C., price 1*s*., postage 6*d*.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8*d*., may be purchased at the Patent Office, or ordered by post, no additional charge being made for postage.

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Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

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The names in *italics* are those of persons by whom inventions have been communicated to the applicants for Letters Patent.

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Guilmin, E............'99. 13,108
Guise, J...................'00. 6350
Gulpen, W. van.........'97. 3136
Gunn, A................'97. 15,243
Gutmann), Fabrik für Spezialnähmaschinen Actiengesellschaft, (Patente Julius...'97. 2862. 30,884. '98. 7015 23,132.
Gutmann), Fabrik für Spezialnähmaschinen A.-G. (Patente Julius. ....'98. 23,863.

Hadaway, J. B. ......'98. 26,800
Haddan, H. J............'00. 6754
Haight, L. M............'00. 7296
Hall, F. E. ....'99. 3640
„ W...................'97. 4120
Hamel, F. S. ....'00. 3971
Handwerck, C.........'00. 11,107
Hardy, C....................'00. 381
Harrap, W. H.........'97. 13,918
Harrison, H. ....'99. 3661
Hawley, F. W.........'97. 25,950
Hayden, N. W. ......'98. 18,539
Hayward, N. ....'99. 14,273
Hechter, J. ....'00. 9659
Henderson, J..........'00. 20,495
Hendley, H. E..........'97. 8787
Henry, J. W. ....'97. 15,243
Herold, F. ....'97. 3136
Herrmann, S. ....'98. 138
Herzberg, H......'98. 5702. '99. 7843
Heusch, E. ....'98. 18,963
Heuvel, M. van den ....'00. 17,266
Hewins, J..................'00. 381
Hewitt, P. H...'97. 22,488. '98. 5587. 5588
Hill, H..............'97. 350. 963
Hillman, (*née* Nehls), A......'00. 13,603
„ M............'00. 13,603
Hingston, W. H......'98. 24,639
Hirschler, F. ....'98. 1203
Hlavácek, W.............'98. 3815

Hollinghurst, J. H. ...'00. 7566
Horner, C. H............'99. 4658
„ J. D............'99. 4658
„ T. H. ....'97. 2694
House, W. M...'98. 14,268. '99. 21,416. '00. 8068. 9134
Hudson, J................'99. 3210
Humphrey, G.........'98. 27,017
Hunt, C. B......'98. 27,182. '00. 16,370. 19,851
„ T. G...............'98. 2884
Hunting, J. C.........'98. 18,539

Iles, C. E. ...'98. 4243. '99. 818
Industrial Manufacturing Co. '98. 9590. 24,067
Inslee, W. H. ...'97. 1422. 1423 1424. 1425. 1426. 4825 7461. 8133. 8718. 9365 9366. 11,056. 11,057. 12,248 12,249. 24,462. 30,183. '98. 2546. 2547. 2549. 6281 6282. 6283. 14,766. 14,767.
International Eppler Welt Machinery Co...'97. 17,404. '98. 7956. 16,753.
International Goodyear Shoe Machinery Co....'97. 13,967 '98. 26,799. '99. 18,076 18,077. 18,078.

Jackson, J. E..........'97. 10,473
Jenkins, W. H. ....'00. 7296
Jensen, P................'98. 14,628
Johnson, E................'97. 1919
„ J. Y.........'98. 11,807
Johnston, J. S. ....'00. 1896
Jordan, J. J. ....'97. 15,477
Joseph, T. H............'99. 9981
Josserand, A.............'98. 1901
Junge, C..................'00. 7178
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Kaiser, H. F. ....'98. 26,758
Kappler, W............'97. 19,310
Kauffmann, J.........'97. 19,369
Kavenaugh, J. T. ......'99. 8829
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Keats Maschinen Gesellschaft. '97. 28,236
Keats, S. ....'97. 14,118
Keller, K................'98. 17,363
Kelly, J. A.............'97. 15,477
Kern, F. ....'99. 16,350
Kleinberg, W.............'00. 9659
Klemm, H. A.............'00. 5652
Klemm, H. A..........'00. 17,909 19,423. 23,415
Knight, A. W..........'97. 21,810
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Koch, K. F.............'98. 24,943
Koehler, B................'99. 4988
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„ J. ...'97. 12,033. 16,993 '98. 16,776. 20,725. '99. 6119. '00. 21,102.
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Kynaston, J............'99. 21,051

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Lachman, M. ....'98. 27,182
Ladbury, C. E............'00. 6350
Lake, H. H.......'97. 5539. 7528 8170. 8787. 13,513. 17,404 20,231. 24,811. 26,037 26,913. '98. 220. 3791. 7956 9590. 15,309. 16,753. 20,997 21,933. 24,067. 24,853. '99. 263. 4645. 21,487. 24,390 '00. 21,992. 22,296.
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Lawrence, C...'00. 4232. 23,142
Lea, E. C...................'99. 4591
„ H.....................'98. 6371
Leach, C. W. ....'99. 4658
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Legg, A. ....'97. 3467
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„ J. C................'00. 7296
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Loeb, R..................'99. 15,137
Loeb, Schoenfeld, & Co., Stickerei Feldmühle vorm. ....'98. 13,629. 13,630.
Loeb, Schoenfeld, & Co., Stickerei, Feldmühle vorm. '99. 12,856.
Loog, H. ....'00. 18,290
Lorrain, J. G......'97. 6697. '99. 3787. 18,114
Lovesay, H...............'97. 8232
Lowe, M. H............'98. 11,270
McCarthy, J. W. ....'00. 9148
MacDonald, D. J.....'98. 24,793
Macdonald, J. K......'98. 21,875 26,421. 27,231. 27,232. '99. 239. 2806. 2903. 2904 5283. 5284. 9940. 10,382 14,524. 16,281. 16,693 17,092. 17,094. 17,095 18,857. 25,246. '00. 585 795. 943. 1597. 1598. 2321 3102. 3319. 5550. 5551 15,990. 15,991. 20,414 22,528.
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MacGlashan, D. ....'99. 4152
McHaffie, W. ....'00. 11,583
McLean, J..............'97. 26,037
Magner, K................'00. 1896
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Makel, L................'99. 16,305
Manning, S. H.............'98. 220
Marquardt, A. O. M. ....'98. 20,727
Marks, G. C............'00. 11,772
Marsden, J................'97. 7311
Marshall, H............'00. 14,559
Marshall, J...............'00. 6656
Martini & Co., Aktiengesellschaft vorm. F.......'00. 562. 2096
Matthews, C. ...'97. 22,488. '98. 5587. 5588
Maurer, C. H. ....'00. 23,142
Meyer, W. C. ....'00. 6908
Meyer-Nägeli, E.......'98. 13,820
Michaud, J................'97. 1570
Middleton-Taylor, S. ....'98. 21,621
Midelton, W. J..........'97. 8975
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„ W. U.........'00. 16,869
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„ S. ....'97. 5348
Nordmann, M. J. ....'99. 15,649
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Owen, W................'97. 28,452

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Parker, J. C. ... .'99. 20,430
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Perry, F. J...............'99. 2153
Peters, A. B. ....'98. 11,241
Peters, H. C.............'99. 21,487
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Petri, O...................'99. 3059
Petrini, C. ....'97. 20,231. '99. 14,296
„ *R.* ......'97. 20,231. '99. 14,296
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„ J. W.........'00. 18,003
„ R. A. F. ....'99. 3821 '00. 2328
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Preusse, C. E.............'99. 3083

Queck, G. J................'00. 373
„ P. ....'00. 373
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„ T. H. ...'00. 2295. 15,407
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Rush, J. T. ....'99. 25,468 25,469
Ruxton, W............'97. 21,239

Salzer, Chemnitzer Wirkwaaren Maschinenfabrik vorm. Schubert &. ......'98. 23,133
Sargeant, E. F. ....'97. 20,680
Saurer, A. ....'98. 1135. '99. 2583
Sauvée, A. ....'98. 23,620
Scetrini, G. H.........'97. 12,022 '99. 11,992
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Scheib, H...............'98. 19,352
Schleicher, M.........'00. 12,224 13,051
Schmiedeken, G......'98. 24,943
Schoenfeld, & Co., Stickerei Feldmühle vorm. Loeb...'98. 13,629. 13,630.
Schoenfeld, & Co., Stickerei Feldmühle vorm. Loeb. '99. 12,856.
Schoeneweiss, A. ....'97. 9884 '98. 22,539. '00. 17,355
Schubert & Salzer Chemnitzer Wirkwaaren Maschinenfabrik vorm.......'98. 23,133
Schütte, J. ....'98. 15,052
Schwartner, E.........'97. 15,264
Schwarz, J. ....'97. 28,223
„ P................'98. 9311
Scott, R. ....'97. 20,253
Scrivenor, M. E.........'98. 1404
Seel, J. B. ....'00. 2953
Shatford, P....'97. 9059. 23,205
Shaw, W. ....'98. 11,807
Shillito, T. R...........'97. 2862 30,884. '98. 23,132. 23,133
Simmons, J...........'98. 10,075
„ W. ....'98. 10,075
Singer Manufacturing Co. ...'97. 1422. 1423. 1424. 1425 1426. 4825. 7461. 8133 8718. 9365. 9366. 11,056 11,057. 12,248. 12,249
Singer Manufacturing Co.—cont. 24,462. 30,183. '98. 2546 2547. 2549. 6281. 6282 6283. 14,766. 14,767. 21,875 26,421. 27,231. 27,232. '99. 239. 2806. 2903. 2904 5283. 5284. 9940. 10,382 14,524. 16,281. 16,693 17,092. 17,094. 17,095 18,857. 25,246. '00. 585. 795 943. 1597. 1598. 2321. 3102 3319. 5550. 5551. 15,990 15,991. 22,528.
Singer Manufacturing Co....'97. 9059. 11,561. '99. 977 3821. 14,367. '00. 2328 4080.
Smith, A.................'98. 10,299
„ G....................'97. 3305
Smyth, D. M. ....'00. 23,122
Snell, J. W..............'97. 30,670
Spitzer, M. ....'00. 15,749
Steam Heated Horn Co......'98. 3791. '00. 21,992
Stein, G. ....'97. 12,044
Stern, R. von............'97. 2130
Stewart, W. J.............'98. 204
Stickerei Feldmühle vorm. Loeb, Schoenfeld, & Co..........'98. 13,629. 13,630.
Stickerei Feldmühle vorm. Loeb, Schoenfeld, & Co. '99. 12,856.
Stief, F. ....'99. 12,680
Straeten, C. van der. ....'99. 12,602
Sturt, C. E. ....'99. 645
Sullivan, J. J...........'00. 20,414
Sunderland, J. W....'97. 12,503
Sykes, A..................'97. 6714

Taylor, S. Middleton-.........'98. 21,621
Thomas Manufacturing Co. '99. 4153
Thompson, W. P. ...'97. 12,044 29,603. '98. 13,629. 13,630 13,820. 16,632. '99. 15,202 '00. 18,711.
Thomson, W. T.......'98. 14,937
Timewell, A. T. ....'98. 798 15,781
Tracy, H. R. ...'97. 15,071. '98. 801
Tracy, H. R. ....'98. 22,946 22,947. '99. 1135. 2271
Trenholm, H. A.......'00. 11,772
Tripp, J. ....'97. 15,994
Turton, J. ....'98. 12,103

United Shoe Machinery Co....'00. 1447. 3656. 8521
Utne, J...................'98. 14,628

Vannette, J............'*98*. 24,656
Vaughan, E. W.......'*97*. 10,384
Vellacott, J. R..........'*00*. 3971
Vosper, C. W..........'*97*. 27,773

Wagner, C. C. M.....'*98*. 17,444
Walter, H.................'*99*. 8592
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Waring, C. E..........'*97*. 30,893
Warren, G. E.........'*98*. 18,433
Webb, T................'*99*. 11,088
„ W. D. ....'*00*. 18,216
Weeks - Colley Manufacturing Co..................'*97*. 26,730
Welch, C.........'*98*. 24,672. '*99*. 25,405. '*00*. 9123
Weston, C. W. ....'*97*. 3467
Wheatley, R. ....'*99*. 24,272
Wheeler, S. H............'*97*. 5539
Wheeler, S. H. ....'*98*. 4997 12,735. 25,178. '*99*. 11,246 11,247. 13,820. '*00*. 5975.
Whitcher, F. W.......'*99*. 21,487
White Sewing Machine Co....'*00*. 6754
Whitehead, E.........'*98*. 25,469
Wiesbader, J. ....'*00*. 20,419
Willis, G. de L..........'*97*. 1181
Wise, W. L......'*98*. 1135. 7015 '*99*. 2583. 19,865. '*00*. 562 2096.
Wood, A................'*97*. 21,239
Worsley, A. E.........'*99*. 10,281 10,282
„ G.............'*99*. 10,281 10,282
Wynne, E. W..........'*99*. 16,278

Yingling, C. J.........'*98*. 24,656
Young, J. ....'*97*. 2040

Zimmarman, M.........'*00*. 4241

ERRATA.

In the volume of this Class for the period A.D. 1893–96 :—

Page v. *Under* buttonhole-sewing attachments *delete '96.* 16,998, *and under* buttonhole-sewing machines *add '96.* 16,998.

In the volume of this Class for the period A.D. 1889–92 :—

Page iv. *Under* **Embroidery** *delete '91.* 3926.
„ xiii. *Delete* Willey, H. *'91.* 3926.
„ 89. *Abridgment No.* **3926** *should be deleted.*

SEWING AND EMBROIDERING.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1897.

311. Richards, F. H. Jan. 5.

FIG. 9.

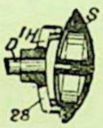
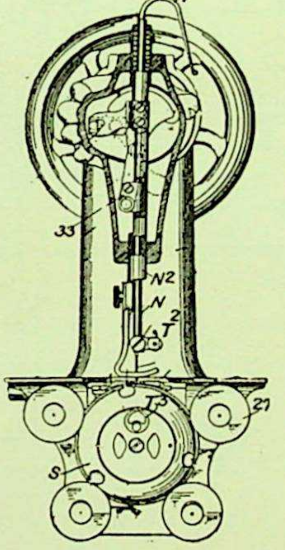


FIG. 5.



Lock-stitch hook sewing-machines.—The hook S is shown in elevation in Fig. 5, and in cross-section in Fig. 9. It consists of a lenticular disc mounted slightly askew on rollers 27, as shown in Figs. 2 and 5, and driven by a three-armed claw H, each of the arms 28 of which releases it as the arm moves through the upper part of its course and allows the loop to pass. The disc has three openings, each forming two hooks, the hooks pointing in one direction being used for lock-stitching and the others for chain-stitching. The shaft D^1 which drives the hooks makes two revolutions to three of the needle-bar shaft D, the effect of which is to cause successive loops to be made by alternate hooks.

Chain-stitching is effected by reversing the motion of the hook disc, for which purpose two mitre-wheels d^3, d^4 are fitted on the shaft D^1. Either of these can be locked to the shaft D^1 by a spring catch 152, constructed so that each wheel is engaged before the other one is released, and the adjustment is not disturbed. By employing the under thread with the chain-stitch, a combined lock and chain stitch is produced.

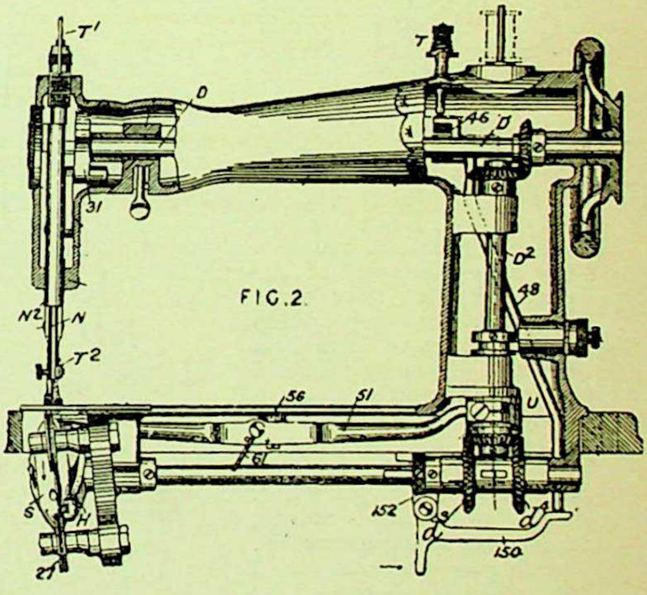


FIG. 2.

Feed.—The feed-bar 51 is connected by a ball-and-socket joint to an eccentric strap U, the eccentric of which is drunk on the shaft D^2. The result is that an elliptic motion is communicated to the feed-dog. The length of feed is regulated by a wedge sliding on the shaft D^2, and altering the throw of the eccentric. In order to alter the distance to which the teeth of the dog are protruded above the throat plate, the feed-bar is mounted so as to be capable of sliding on a block attached by a vertical pivot 56 to the cloth plate. The feed-bar is attached to the block by a horizontal pivot, which is carried in eccentric bearings so that the feed-bar can be slightly shifted lengthways by a pin 61, thus varying the ratio of the length of its arms.

Presser-feet; needle-driving. — The presser-foot bar N^2 is acted on by a spring contained in an adjustable casing in the head of the machine, and is tubular so as to act as a guide for the needle-bar N. It is also cut away to make room for a strap 33 which embraces the needle-bar and operates it. The needle-bar is driven by a crank 31 on the main shaft, and the disposition of the parts is such that the needle at the commencement of its ascent moves with comparative rapidity and causes the loop to be drawn tight round the hook, and ensures its engagement therewith. The presser-foot is lifted either by hand or by a rod 48, Fig. 2, acted on by a lever 150, which is operated from underneath the table.

Governing needle thread.—The tension T is automatically loosened when the presser-foot is lifted by a pin operated by an arm 46 projecting from the shaft which actuates the presser-foot. The take-up T^1 consists of a wire carried on the head of the needle-bar, and having an eye, the mean position of which is somewhat below the level of the main tension T. The thread is also kept tight at the commencement of the ascent of the needle by a tension device T^2 on the lower end of the needle-bar.

Governing under thread.—The tension for the under thread is shown at T^3, and consists of two hooks with one or other of which the thread engages in whichever direction the hook disc rotates.

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350. Hill, H. Jan. 5.

Embroidery. — Relates to a machine for reading a pattern and punching jacquard cards and the like for embroidery and other machines. The pattern is laid on a table, and a pointer which communicates motion to two superposed frames is moved over it. One of the frames moves horizontally and the other vertically, and they thus copy the two motions which have to be given to the embroidery frame. Each frame operates a set of punches, one set on each side of the cards or band. The cards or band have a step-by-step motion given to them by a drum I^1, driven by pawl and ratchet gearing from a treadle by which the punches are operated. The action of the frames being similar, one only need be described. The horizontally-moving frame has spring pincers C^2, which grasp an endless band G, but which are opened by a plate C^3 so as to release the band when the treadle above mentioned is depressed. The band has tappets G^3, G^4, which engage with a carriage L running on fixed rails. The carriage is thus moved to the right by one or other of the tappets in whichever direction the frame is moved. The motion of the carriage brings a plunger L^1, which

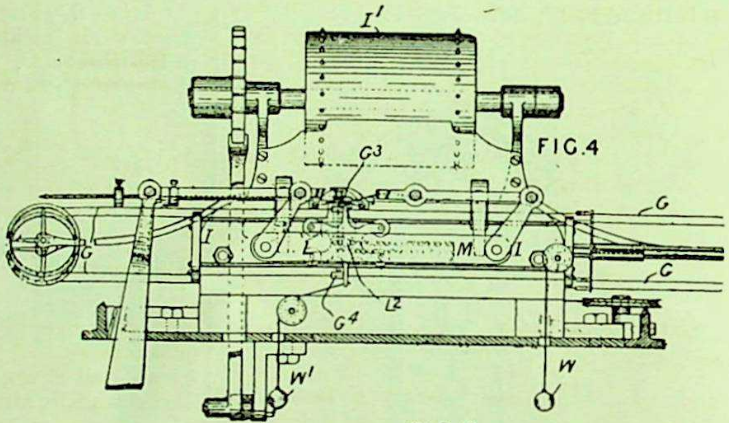
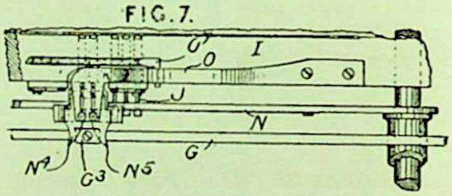


FIG. 4.

FIG. 7.



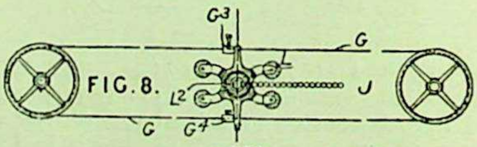


FIG. 8.

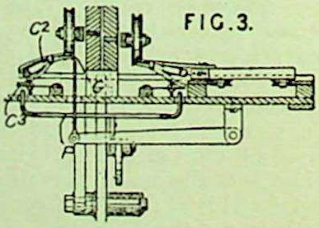


FIG. 3.

is mounted on it, opposite one or other of a row of eighteen punches J, carried in a fixed support I. When the carriage has thus been moved in accordance with the movement of the pointer on the pattern, the treadle is depressed and drives forward a plate M, which forces the plunger against the head of the selected punch and a hole is made in the card. The heads of the punches are engaged by a plate N, Fig. 7, parallel to M and moving with it, so that, on releasing the treadle, the punch just actuated is moved back into its normal position. At the same time the plate C³, Fig. 3, is raised by an arm P connected to the treadle, the pincers C² are opened, and the bind and carriage are returned to their normal position by weights W and W¹. The normal position of the carriage is such that its plunger is situated opposite a gap between the set of eighteen punches J and a pair, shown in Figs. 4 and 8, which make, in the card, holes the object of which is to determine the direction of motion of the embroidery frame to left or right, or up or down, as the case may be, just as the others determine its amount. Fig. 7 shows the means for actuating these punches. The tappet G³, which normally lies between dogs N⁴, N⁵ pivoted on a fixed support, in its motion to right or left releases one of the dogs, so that the corresponding plunger drops and engages the head of the punch opposite to it when the plate N moves inwards. The plunger is raised by a spring catch O actuated by a rod O⁷ from the treadle.

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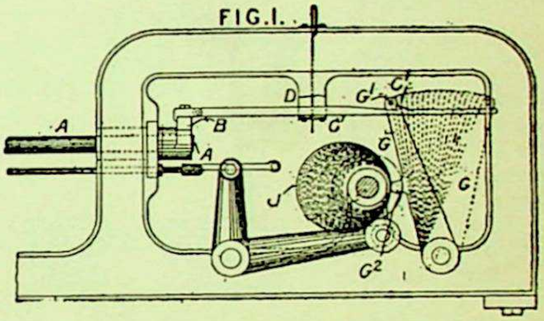
963. **Hill, H.** Jan. 13.

Embroidery.—Relates to jacquard mechanism. A is one of two shafts which move the embroidery frame horizontally and vertically respectively. Each shaft is connected with a frame B, pivoted on which are a number of arms or jacks C provided with hooks C¹ and thus adapted to engage studs G¹ in levers G. J is a set of cams or eccentrics, each of which is intended to engage a nose G² on the corresponding lever G and move it a distance equal to its throw. The jacks C are raised by needles D selected by the jacquard card. The limit of movement of each lever is shown by dotted lines.

FIG.I.



1181. **Willis, G. de L.** Jan. 16. *Drawings to Specification.*

Pin and like boxes and cases.—A bottle or receptacle for containing ink, gum, &c. is formed with trays or receptacles for holding pins and various other useful articles.

1422. **Inslee, W. H.,** [*Singer Manufacturing Co.*]. Jan. 19.

Lock-stitch hook sewing-machines.—A lock-stitch machine is described in which the loops of needle thread are carried round the lower or locking thread by a rotating hook. This lower thread is carried on a bobbin enclosed in a stationary bobbin case or shuttle G which is supported on reciprocating pins *i*, *i*¹. These pins are carried by a framing I, which is connected to, and reciprocates with, the shaft F. The latter also rotates, and carries with it the hook *f*. The pins *i*, and *i*¹ are of non-circular section, and the latter is made removable to allow the shuttle to be put in place or removed. The hole through the shuttle is of corresponding section to the pins, and the said shuttle is held stationary between two arms projecting from a bracket H. The shaft F

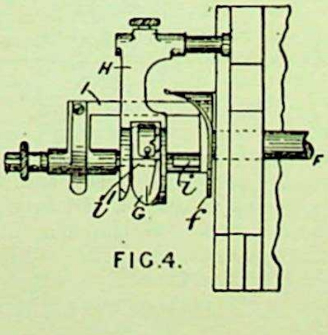
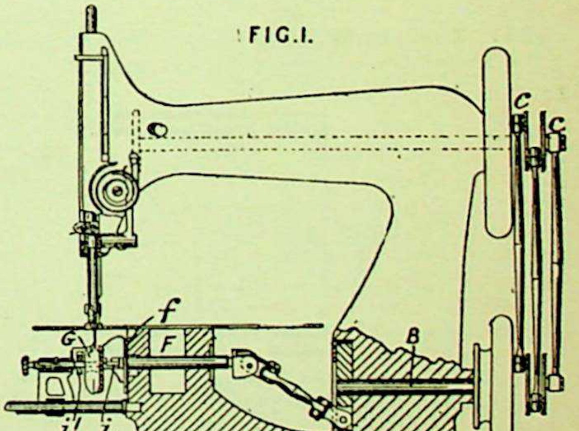


FIG.4.

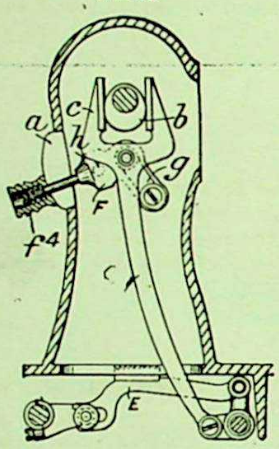
FIG.I.



is rotated and reciprocated by the shaft B through the gear shown, and the needle shaft C is driven by three-throw cranks and connecting-rods. The pins i and i^1 are, alternately, drawn clear of the shuttle to allow the hook to pass the loop of needle thread round the said shuttle.

1423. Inslee, W. H., [*Singer Manufacturing Co.*]. Jan. 19.

FIG. 2



Sewing - machine feed for lock-stitch machines. Means are described for instantly reversing the feed without stopping the machine. The arm g of the bell crank F is attached to the lever C, which receives motion from the cam b, and reciprocates the feed-lever E by the links shown. The crank F has a notched projection which is engaged by the end of a bolt h tapped through the framing, and is held in the operative position by a spring-controlled collar f^4, which bears against an abutment a. According to the position of the controlling-crank F, the lever E may be caused to move in either direction or to remain at rest.

1424. Inslee, W. H., [*Singer Manufacturing Co.*]. Jan. 19.

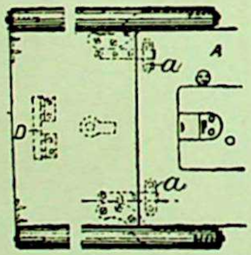


FIG. 2.

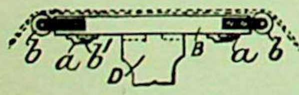
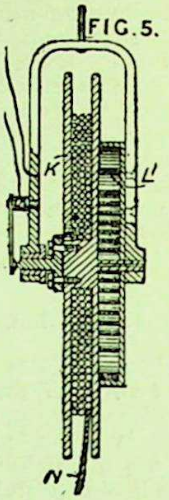


FIG. 3.

Sewing-machine work-supports. — An extension table is described by which heavy work, such as sails, may be supported. An extension table B carries two rollers b, and is supported by ears b^1 engaging with brackets a on the table A, and by the hinged leg D. The rollers overhang the table A, as shown.

1425. Inslee, W. H., [*Singer Manufacturing Co.*]. Jan. 19.

FIG. 5.



Carpet-sewing machines. — The machine is driven by an electric motor mounted on it, and travels along the carpet edge, being suspended by a spring from a trolley running on a rail in a usual manner. The double wire N carrying the current is wound on a reel K, the slack being taken up by the spring L^1; or the slack may be taken up by a weight.

1426. Inslee, W. H., [*Singer Manufacturing Co.*]. Jan. 19.

FIG. 3.

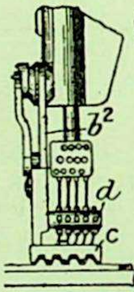
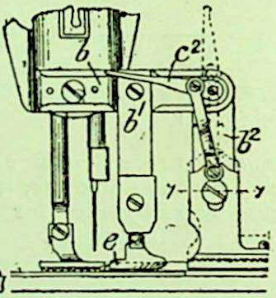


FIG. 2.



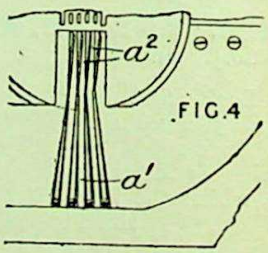


FIG. 4

Sewing-machine folding-attachments. — The device is applicable to multiple-needle machines. The material is plaited by passing it between the grooves a^1 and those of the plate C. The latter has a sliding connection with the arm b^2, which is rigidly attached to the arm b, and can be readily raised by means of the lever c^2. To the bracket b is also attached the arm b^1 carrying an angular bracket d, on the lower side of which is a series of guiding and turning blades e, between which and the projections a^2 the plaits are gradually flattened.

1570. **Michaud, J.** Jan. 20.

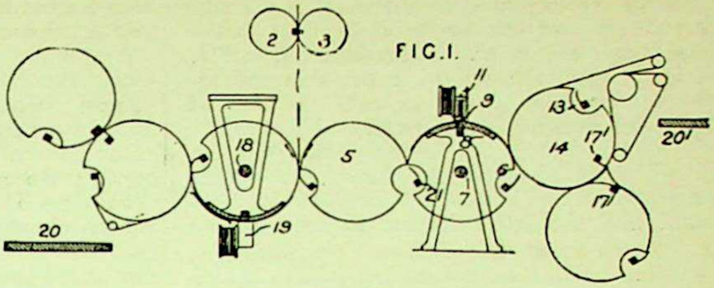


FIG. 1.

Book - stitching machines.—Relates to the combination of sewing-mechanism with printing and folding machines. In the arrangement shown, the superposed sheets are cut by the cylinders 2, 3 and are taken alternately by the cylinders 5 and 18. From the cylinder 5 the sheets are taken by the grippers 6 of a cylinder 7 in which is a gap for a sewing-apparatus 8, 11 of any suitable form. The sheets are held during sewing by pressing-pins, and are then taken by the grippers 13 of the cylinder 14, folded by the blades 17, 17¹, and delivered to the table 20¹. After sewing, the sheets may be taken by the grippers 21 instead of 13. The sheets are stopped and sewn on the cylinder 18 by the apparatus 19 arranged similarly to the mechanism 7, 8, 11, &c., and are delivered folded on the table 20. In a modification, the sheets are stopped for the sewing while on sets of carrying-tapes.

1919. **Johnson, E.** Jan. 25.

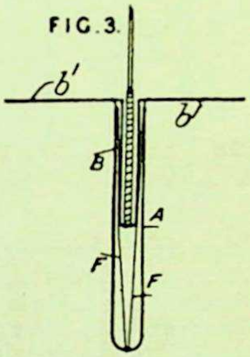


FIG. 3.

Needle, pin, and like boxes and cases are formed with an inner holder or drawer B having sides, the upper halves b^1 of which are hinged to the lower. The sides b^1 are attached to the bottom of the outer case A by an elastic band F, so that, when the inner case is withdrawn, the sides b^1 will fly open to expose the contents, as in Fig. 3. The inner and outer cases may be made of metal or paper, and instead of an outer case a frame in which the inner case slides may be used.

2040. **Young, J.** Jan. 26.

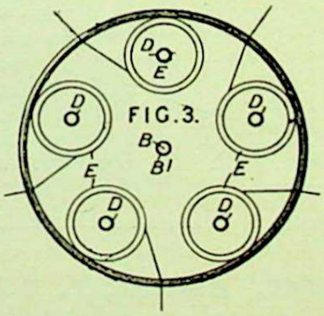


FIG. 3.

Sewing - machine spool and bobbin holders.—A number of reels E with different sorts of cotton are carried on pins D mounted in a circular casing, which has a central tube B^1 fitting over the reel-holding pin B of the sewing-machine. The cotton from the reels is threaded through slits in the side of the casing. Instead of attaching the pins D to the bottom of the casing, they may be carried by a plate which rests on the bottom and to which the tube B^1 is attached. The casing may also be made rectangular with horizontal pins for the reception of the reels. The reel holder may be secured by springs to the arm of the machine.

2130. **Bardach, J.,** and **Stern, R. von.** Jan. 26.

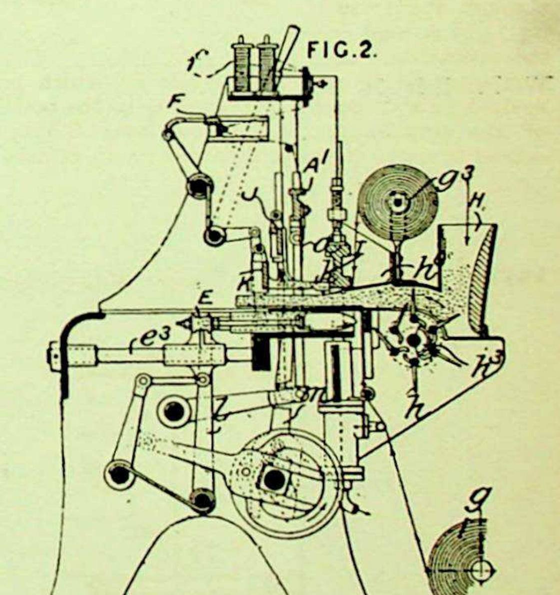


FIG. 2.

Straw - mat sewing - machines; multiple - needle machines. — The straw is introduced through a hopper H, and is fed to the machine by a revolving shaft h^3 having pivoted tappets h which are placed in position for feeding by fixed cams. The gearing for the shaft h^3 includes a friction device which prevents the straw from being fed too fast. The straw thence passes under a hinged flap h^8, and may be covered on one or both sides by fabric supplied from rolls g, g^3. A compressing-bar I, actuated by hydraulic or other suitable means, bears on the free edge of the flap and compresses the straw, which is fed forward at each stitch by arms k furnished with points and mounted on a bar K which is actuated by cams. The cams operate arms l and m, the former of which imparts horizontal and the latter lateral motion to the bar K. J is a vertically-reciprocated bar furnished with spring presser-feet, through holes in which needles a, mounted on a vertically-reciprocated bar A^1, pass. The needles act in conjunction with their several shuttles, which are reciprocated each in its own race by a bar E sliding on rods e^3. The needle threads are carried on spools f, and are withdrawn as required by a take-up bar F. The machine contains the usual arrangements for raising the presser bars and regulating the feed. The edges of the mat are trimmed in the machine by wheel cutters.

2694. Laurence, C., Fisher, F. W., and **Horner, T. H.** Feb. 2.

Needle-threaders.—A frame b slides in an outer casing a and is pressed upwards by a spring c. The casing a carries a central rod d which passes out through a hole in the frame, its end lying at the bottom of a V-shaped groove b^4 which is shaped so as to receive the needle. The thread is laid along the groove and the needle is placed over it, a shoulder b^5 being provided to guide the needle into its correct position. The frame is now depressed, and the rod d pushes a loop of thread through the eye of the needle. At the same time a spring catch e carried by the frame is pushed aside by a fixed pin f, and, as the frame rises under the influence of the spring c, the point e^1 of the spring catch enters the loop and prevents it from being drawn back through the eye. The needle can now be removed and the thread drawn completely through.

FIG.1

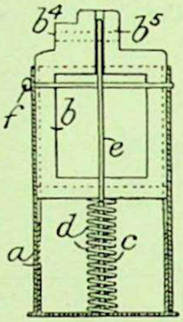
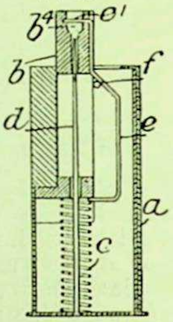
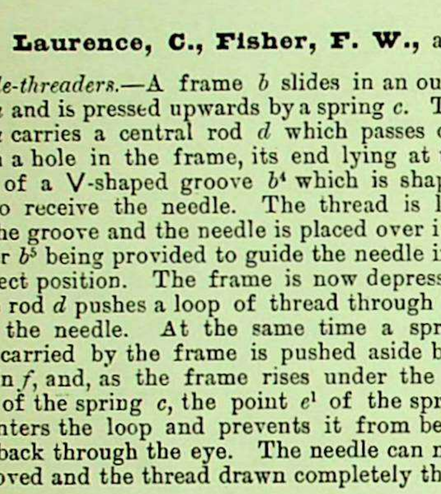


FIG.2



2705. Birch, W. Feb. 2.

FIG.I.



Basting-machines; feed.—The invention relates to machines having an intermittent feed which are used for sewing fabrics together previous to dyeing or bleaching them. The invention consists, firstly, in using a continuous feed to supply the requisite length of fabric to the intermittent feed, and, secondly, in stripping the fabric from the pins on the intermittent feed-ring. To effect the first part of the invention, a lever c carrying rollers d and d^1 is pivoted to the framing. The fabric e is led past a guide h between the roller d^1 and a continuously-rotating feed-roller g, thence over a roller k mounted on an arm m which turns on a fixed pivot n and is acted on by a spring so as to take up the slack, and finally under the roller d which presses it on to the teeth b^1 of the feed-ring b. In order to introduce the fabric, the lever c is raised, raising at the same time the presser-foot, if one is used. The lever can be held in its raised position by a catch c^2 engaging with a notch $f^\times$ and released when required by a lever $c^\times$. The second part of the invention consists in using a slotted plate for disengaging the fabric from the teeth b^1 after sewing. This plate is mounted on a lever which is preferably actuated by a roller on a link connecting the pawl gearing for operating the intermittent feed with the eccentric whence it derives its motion.

2862. Shillito, T. R., [*Fabrik für Spezialnähmaschinen Actiengesellschaft* (*Patente Julius Gutmann*)]. Feb. 3.

Ornamental-sewing machines; feed.—The necessary motion of the presser-foot 17 for producing such a design as a festoon is communicated by an eccentric working in a ring to which the presser-foot is attached. The invention consists in an arrangement for rotating the shaft of the eccentric either by hand or automatically. The upper end of the shaft has teeth engaged by a rack on a rod 33. This rod can be moved by gearing operated by a handle 58 or by the forked end of a lever which is made in two parts connected by a clamping-screw 57. This screw, when loosened, makes the lever inoperative, so that the movements can be made by hand alone. Otherwise, motion is communicated through the lever from a cam 40, which is operated through pawl and ratchet gearing by a projection 42^1 on a cam 42.

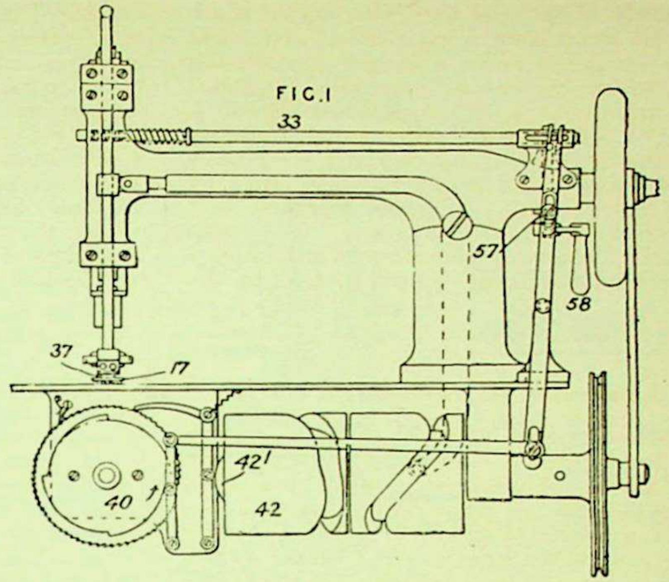


FIG. 1

3136. **Herold, F.**, and **Gulpen, W. van.** Feb. 5.

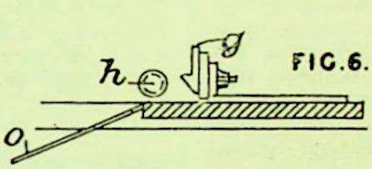


FIG. 6.

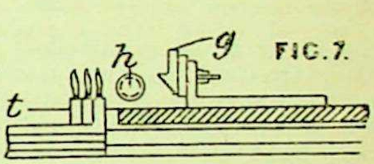


FIG. 7.

Sewing-needles.—Relates to means for tempering needles and for laying their heads in the same direction. The needles, which must be all of the same length, are fed down an inclined shoot to a screw *h*, close to which is a guide *g* having a ledge on which their heads or points rest. Those which have their heads on the ledge remain there and are worked along by the screw to a box at the end. The others are overbalanced by the weight of their heads and fall down a shoot *o* into another box at the side. To temper the needle the shoot *o* is replaced by adjustable gas jets *t*. The motions are derived from one spindle by belt and pulley gearing, and interchangeable parts are provided to suit different sizes of needles.

3221. **Millar, J.** Feb. 6.

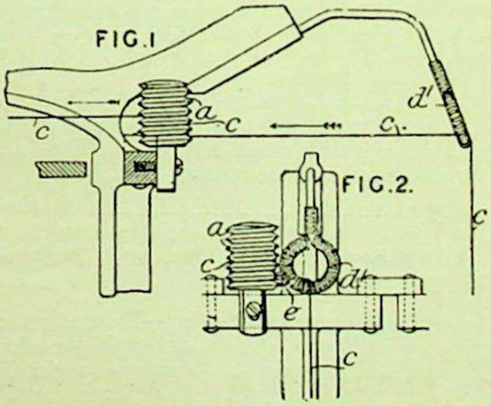


FIG. 1
FIG. 2.

Sewing-machines, governing needle thread in.—The thread *c* is passed through a cloth-covered guide-ring d^1, and through an eye *e* and one or more times round a smooth screw *a* to the work. The tension can be regulated by varying the number of turns round the screw.

3305. **Smith, G.**
Feb. 8.

Needle, pin, and like boxes and cases.—The sides of the handles of pocket knives A are formed as boxes B with hinged lids E.

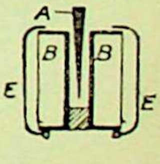


FIG 2

3467. **Legg, A.**, and **Weston, C. W.**
Feb. 9.

Sewing-machine needles, hook, threading-devices for.—In Fig. 6 the shuttle X is shown forming a loop in a thread 1 which is forced through the fabric by a hook needle N. It will be seen that the supply of upper thread necessary to form the loop is drawn direct from the supply and not through the hook of the needle. In order to accomplish this, the shuttle does not pass the needle on the usual side, but on the opposite one. Figs. 2 and 4 show the device for laying the thread in the hook of the needle. The thread passes through hooks k^1, l^1 on arms k, l which are pivoted together by a stud t sliding in a slot in the presser-foot C. They are also attached to the presser-foot by links w, w^1. D is a standard on the presser-foot carrying levers F, G, the former of which is moved up and down by the needle-bar, and actuates the latter one by a stud a sliding in a cam-groove. A pin o on the lever G enters a hole in the arm k, and the total result is that the arms k, l open and shut as well as reciprocate, and the hooks k^1, l^1 thus lay the thread in the hook of the needle.

FIG.6.

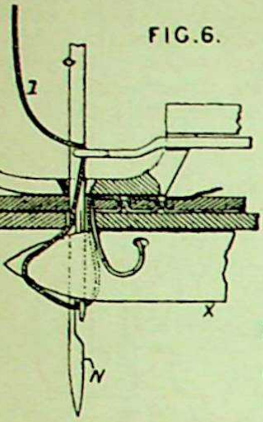


FIG.2.

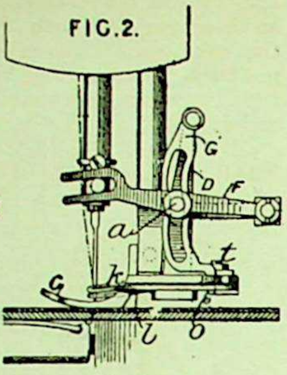
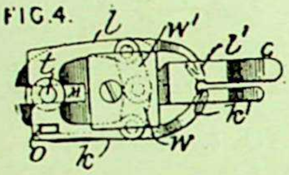
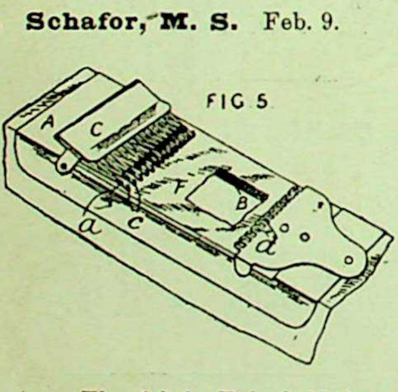


FIG.4.



3476. Schafor, M. S. Feb. 9.

FIG 5



Darning.—The fabric F is held between two plates A and B, the former of which has a set of fixed hooks a and also a set of adjustable ones d. A set of movable hooks c is carried by a thumb-piece C so that its members can move up and down between those of the set a. The hooks a and c are turned in opposite directions. The thread is passed backwards and forwards between the hooks, one end being fastened to the fabric. The needle is then passed across the threads, and the thumb-piece is operated at the same time so as to form a shed. The end of each stitch is worked into the fabric.

4120. Hall, W. Feb. 16.

Sewing-needles.—Relates to improvements in the process of shaping or tapering metallic articles described in Specification No. 11,192, A.D. 1894, by the use of an electrolytic bath, the articles forming the anodes, or by simply dipping them into an acid. Among articles which may be formed by this invention are needles. The articles are formed round or of a uniform shape by rotating them within or moving them through the electrolyte during the process. This may be done by supporting the articles from a rotating frame, so that the articles or bundles of them are also rotated on their own axes. The articles may be thinned, tapered, &c. by drawing them through an electrolytic solution, either at an intermittently or continuously uniform rate, or at a varying and gradually increasing or decreasing rate, or at an intermittently increasing or decreasing rate. Or the same result may be brought about by increasing or decreasing the intensity of the current employed while the wire or other article is drawn through the electrolyte.

4432. Childers, H. M. Feb. 18.

Needle-threaders for use with sewing-machines. A block having a shoulder 6 and a taper hole 8 is placed across the presser-foot. The needle is then lowered, so that its point enters a hole 10 in the block and its eye registers with the smaller end of the taper opening 8. The thread is then passed through the hole 8 into the eye, after which it can be released from the block through a slit 9. The block is then removed from the presser-foot

FIG.2

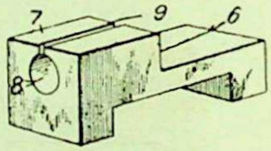
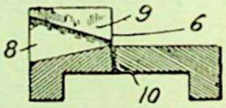


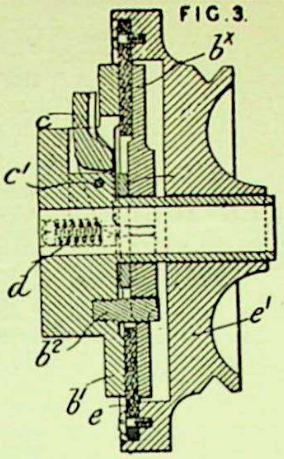
FIG.3.



4770. Rossiter, T. R., and Noble, D. Feb. 22.

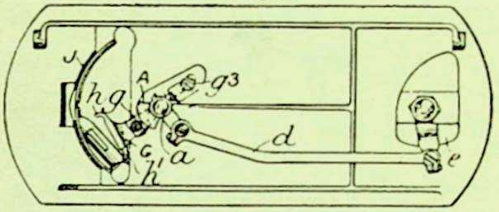
Sewing-machine stopping-gear.—Relates to a clutch chiefly applicable for stopping sewing-machines at any point, and designed so that no strain shall be thrown on the bearings. The invention is also applicable generally. The driving-pulley e^1 is loose on the main shaft, and has a washer e which projects inwardly between two discs b^1 and $b^\times$, the former of which is fixed on the main shaft and the latter loose. The discs are made to rotate together by a pin b^2, and are normally urged towards one another so as to grip the washer e^1, and thus cause the main shaft to revolve, by springs *d*, but they can be separated by a lever *c* pivoted on a pin c^1 to the disc b^1. The necessary movements of the lever *c* are caused by a bell-crank lever actuated by a pedal and engaging with the lever as it revolves.

FIG. 3.



4825. Inslee, W. H., [*Singer Manufacturing Co.*]. Feb. 23.

FIG. 1.



Lock-stitch shuttle sewing-machines.—Relates to noiseless mechanism for shuttle machines where the shuttle moves in an arc of a circle. The shuttle-driver A is pivoted at *a*, and is actuated by a rod *d* and arm *e*. A lever G, provided with horns *h*, h^1, is pivoted at *g* to the driver A, and is further guided by a pin g^3 which is attached to the bed-plate and enters a slot in the lever. The horns *h*, h^1 alternately enter holes in the shuttle and drive it, the mechanism being arranged so that one horn engages with the shuttle slightly before the other one releases it, so that it is always positively driven. The race J has a flange or rib which enters a groove in the shuttle and helps to support it.

5348. Nolan, S. Feb. 27.

FIG. 1.

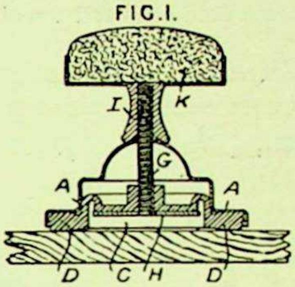
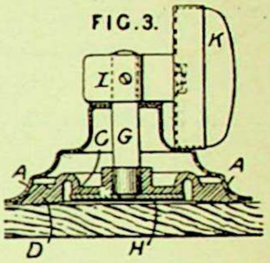


FIG. 3.



Sewing, work-holders for.—These can be attached by suction to a table or other piece of furniture. Referring to Fig. 1, C is an india-rubber cup with a wide lip D, shaped as shown and placed inside a hollow base A. Inside the cup is a plate H having a spindle G on which screws a sleeve I carrying a pad K. By turning the pad, the plate H is raised and a vacuum created inside the cup C. The sleeve I can be pivoted on the spindle G, as shown in Fig. 3, so that the plate is lifted when the pad is raised to a vertical position.

5539. Lake, H. H., [*Wheeler, S. H.*]. March 2.

Lock-stitch hook sewing-machines; multiple-needle machines; work-supports. — Relates to a two-needle machine in which the hook spindles a^8, a^9 are vertical and the hooks revolve in a horizontal plane. The gears for driving the spindles are adjustable on their common driving-shaft, and the parts *a*, *b* of the frame which carry the spindles and hooks are adjustable to and from a fixed standard *c* which carries the feed-mechanism. The machine can thus be adapted for needles different distances apart. Fig. 5 shows one of the hooks in

FIG. 1

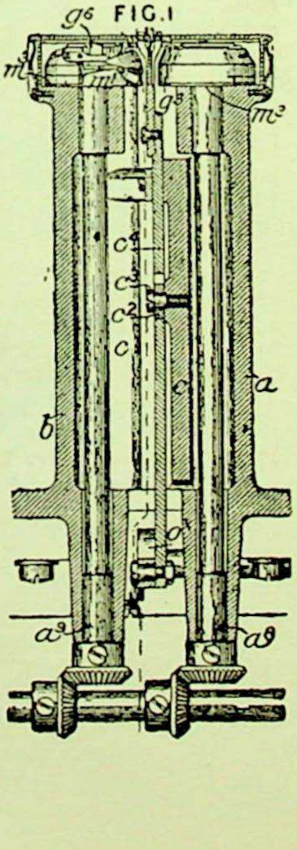


FIG. 5

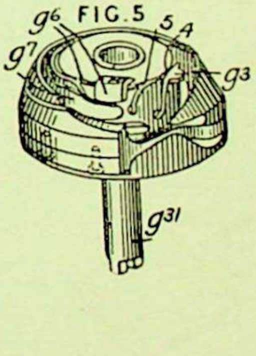


FIG. 6.

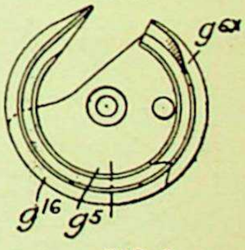
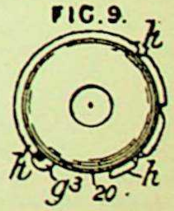


FIG. 9.



the thread case and bobbin, Fig 6 showing the hook alone. It consists of a base-plate g^5 having a shank g^{31} for attachment to the driving-spindle, and fitted with a flange made in two parts, one part g^{16} being a fixture, while the other part $g^{6\times}$ can be moved when it is required to detach the thread case. The latter is held by a flange h, Fig. 9, fitting in a groove in the flanges first mentioned. The flange h is cut away at 20, leaving a notch into which the hook casts the inactive side of the thread loop, which loop is retained there while being opened and cast round the thread case. The side wall of the thread case is cut away for a considerable distance round to give ready access to the bobbin, the portion left having a lip g^3 which enters a notch in the needle plate, and three thread slots, two of which are shown at 4 and 5. g^6 is a lip which extends over the bobbin and keeps it in place, and also helps the loop to pass over the bobbin and case. g^7 is a tension spring adjustable by a screw. Beneath the hook is a washer m^3 having a cam-shaped flange m^1 which meets the needle if it should be bent from its proper place, and guides it into position so that the hook shall receive the thread from it.

Feed.—The feed-dog is carried by a lever c^4 which slides on a block c^2 pivoted on the fixed part c of the frame, and is jointed to an arm $o^\times$, one of the ends of which is reciprocated vertically and the other horizontally. Different feed-dogs and needle plates are required for different distances between the needles.

6128. Brookes, A. G., [*Brooks, J. W.*]. March 9.

FIG. 2.

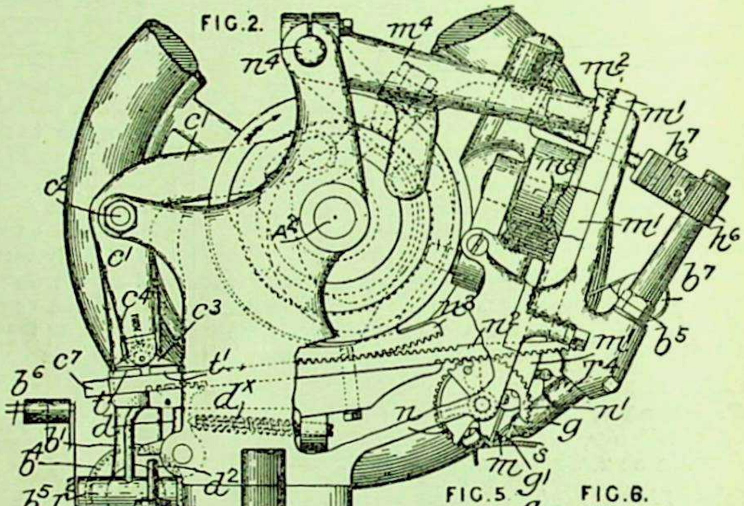


FIG. 5.

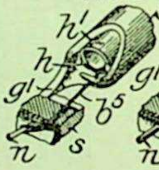
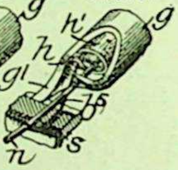


FIG. 6.

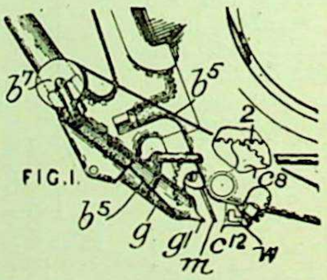


Boot-sole stitching-machines —Relates to a chain-stitch machine for securing the upper and welt to the insole by a waxed thread.

Needle-driving. — The needle n is carried by a toothed sector n^1 in gear with a rack n^2 which is driven by a sector n^3 pivoted at n^4 and reciprocated by a cam on the main shaft A^2. The needle is provided with the usual support.

Guiding materials. — The insole s is preferably made with two channels, as shown in Fig. 1, into one of which a fixed support g^1 enters. The work is held up against the fixed support by a welt guide c^{12}, Fig. 1, carried by a toothed sector c^8 in gear with a rack 2, and mounted on the same spindle as the needle sector. The rack is carried by a rod c^7 which is actuated by pawls on an arm c^1 operated by a cam and pivoted at c^2. The rod is urged in such a direction as to press the welt guide against the work by a spring $d^\times$ acting on a sector d in gear with it, but the sector d may be moved so as to release the welt guide for removing and introducing work, by a pin d^2 actuated by a pedal. The lever c^1 releases the welt guide so that the feed-mechanism can act, and on account of its pawl and ratchet connection with the rod c^7 the welt guide is enabled to accommodate itself to work of different thicknesses. The pawls c^3 and c^4 are released from the ratchet teeth by wedges t^1 and t. The welt is fed to the work through a hole w in the welt guide.

FIG. 1.



Feed.—This is effected by a feeding-awl m which engages with the work close beside, and on the right-hand side of, the needle, and moves across the needle's track to its left side. It is carried on a bar m^1 which has two motions—an up and down one imparted by a sector m^2 pivoted on an arm m^4 which is pivoted at n^4, and an oscillating one about a pivot m^5.

Needles, hook, threading-devices for ; governing needle thread.—The thread b^5 passes from the wax pot b^6 round a cam-actuated tension and take-up pulley b^4 mounted on a pivoted arm b', thence over a fixed pulley b^7, and down through a tube g which carries the work-support g^1 and contains a rotary reciprocating hook h actuated by a pinion h^6 and an oscillating sector h^7. The hook is on a tube h^1, and it lays the thread round the needle, which then withdraws, taking a loop back with it through the work. The operation of engaging the thread with the needle is shown in Figs. 5 and 6.

Wax-thread machines.—The wax pot is heated by steam, which also warms a block r^2 against which the tension device bears and is thus heated. The tube g has a collar r^4 which is also warmed by steam.

6697. Lorrain, J. G., [*Catenacci & Co., E.*]. March 13.

FIG.1.

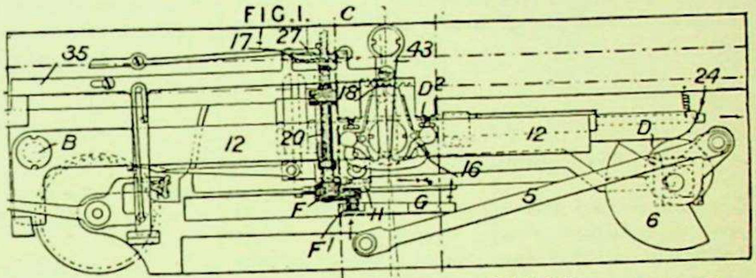


FIG.28

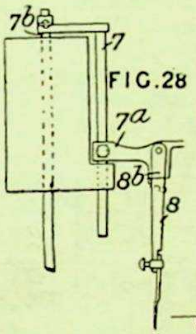


FIG.22.

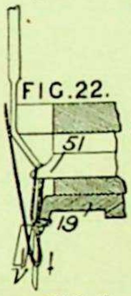


FIG.26.

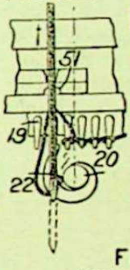


FIG.27.

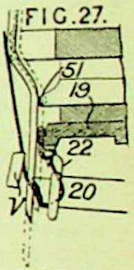


FIG.24.

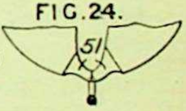
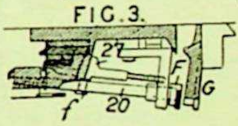


FIG.3.



Sewing-machine knitting-attachments.—Improvements are made in the knitting-appliances of the combined sewing and knitting machine described in Specification No. 2985, A.D. 1894. The knitting-needle is of the form shown in Fig. 22, and passes the thread round one of a pair of pivoted horns 51, Fig. 24, held together by a helical spring (not shown). The inclined portion of the needle opens out the horns to allow the loop to drop on to an oscillating looper 22, Figs. 26 and 27, which transfers it to one of the teeth of the comb 19. The looper shaft 20, Figs. 1 and 3, has keyed to it an eccentric f actuating the loop lifters 27, and at the farther extremity a crank F, the pin F^1 of which moves in a groove in the piece G secured to the shuttle-carrier. This connecting-piece is reciprocated by a rod 5 jointed to a balanced crank 6 on the shaft carrying the cam D, and oscillates the said shaft 20. By means of a rod 24, Fig. 1, and an angle-piece H, the pin F^1 can be withdrawn from the piece G and the knitting-mechanism thrown out of action. A rod v prevents the loops from dropping off the comb. As shown in Fig. 28, the needle is secured to a holder 8 which is pivoted to an arm 7^a and is held by a spring 8^b. The arm 7^a is secured to a rod 7 depending from an arm carried by a rod 7^b operated in the usual way. The comb is fed by the mechanism described below. A lever 12, Fig. 1, pivoted at B and reciprocated by a cam D and a spring, has at c a pivot on which two pieces 16 and 17 can oscillate. The former is mounted on the pin and has a projecting portion fitting the slotted piece 17 on which are formed teeth 18 gearing with the comb. Thus, when the lever 12 moves backwards, the teeth 18 gear with the comb, while a stop on the piece 16 hits a fixed stop D^2 and rocks both pieces 16 and 17, so that the comb is fed a distance equal to the pitch of the teeth. When the lever is moved away from the comb, the pin 17 is disengaged and is returned to its former position by an anchor-piece 43, which can be operated by a hand-lever 35. In a modified form of apparatus, the lever 12 and looper shaft are reciprocated and oscillated, respectively, by eccentrics on the driving-shaft.

6714. Sykes, A. March 15.

Sewing-needles, surgical. Mounted in a bracket g, carried by one of the instrument blades a and b, is a spindle h, the front end of which is enlarged and formed with a helical groove, in which works a helical needle i capable of being advanced by means of loose bevel gear k, l, operated by a spindle l^1, or by other suitable means. The needle has a groove i^1 on its surface for receiving the charge of thread, which passes on to it through a guide n as it advances to perform the stitching operation.

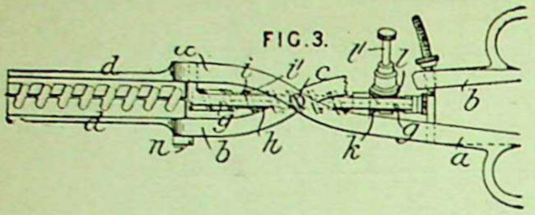


FIG. 3.

7257. Field, G. March 20.

Crochet-hook cases; needle cases.—The invention relates to a handle and sheath for a crochet-hook combined with a needle case. The article consists of a piece of tube into one end of which the needle case fits, being held by friction or by a screw. The crochet-hook is attached to another and shorter piece of tube, either end of which can be held in the tube. The longer tube forms a handle or a sheath for the crochet-hook, according to the end of the shorter tube placed in it.

7311. Marsden, J. March 20. *Drawings to Specification.*

Embroidery. — Patterns for embroidery are marked upon cloth &c. by means of special stencilling-apparatus. The stencil plate is preferably made of cotton or linen well filled with glue and pipeclay so that it closely resembles stout paper. On this cloth is marked out the required patterns, and these are then perforated along their outlines by a sewing-machine in which the needle is replaced by a small punch working below into a tubular die. This stencil plate is then placed on the cloth to be marked, and a powder consisting of whiting or chalk and resin, with colouring-material if necessary, is rubbed over it so that a portion falls on to the cloth below, which is then passed through heated rollers so as to melt the resin and mark the cloth, which is subsequently wound up by an automatic folding-apparatus. The powder may be replaced by a gelatinous or liquid material. The stencil may be formed of a thinly-woven material thickly coated with a chemical composition on which the outlines of the patterns are marked by an ink which dissolves the composition and allows a marking-material to pass through at these parts and mark the cloth below. In the Provisional Specification it is stated that this stencil may be wrapped around a self-inking roller so that the ink passes through the corroded parts on to the cloth to be marked.

7461. Inslee, W. H., [*Singer Manufacturing Co.*]. March 23.

Chain-stitching machines.—An improved method of operating the loopers is described. The rock shaft E is actuated from a crank on the driving-shaft and communicates its motion to the looper-carrying shaft G by the curved rod f, the arrangement being such that the proper timing of the shaft G is obtained without the use of a cam. Several loopers may be carried on the shaft G to co-operate with several needles.

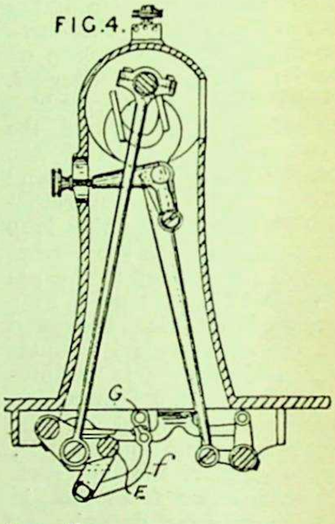


FIG. 4.

7528. Lake, H. H., [*Coupal, P. A.*, and *Gordon, W.*]. March 23.

Boot-sole stitching-machines.—The invention relates to a chain-stitching machine in which the stitch is set on the side of the work next the needle by a finger m^{19}. The commencement of a stitch is shown in Fig. 10, where the loop of the previous stitch is held open by a hook t^{13} for the passage of the curved needle h^{10}. The thread is wrapped round the needle after the latter has passed through the work, by a looper c^{12}, and as the needle leaves the work the new loop is taken off it by the hook t^{13}, the old loop being then drawn tight by the finger m^{19}, as shown in Fig. 8. The machine is shown in sectional elevation in Fig. 2. The motions are derived from cams in the usual way. A work-support a^{15} and a gauge a^{28} act in conjunction with a welt guide r^{11}. The shank r^8 of the welt guide slides through a block pivoted at r^{10} and is actuated by a rock shaft r^6 deriving its motion from a shaft b on which is fixed an arm operating a tripping-device a^{48}. This tripping-device acts upon a lever a^{33} which normally keeps the gauge and work-support locked by dogs a^{49} and a^{39}. When the gauge and support are thus released, they are held up to the work by the pressure of springs only. The awl b^9 is operated in the usual way by a series of rods and levers b^8, b^5, b^3, b^2, and has a lateral movement to give the feed, the lever b^8 sliding with it. t^{13} shows the thread hook, and m^{19} the finger which is attached to a bar m^{15} sliding through an eye bolt and oscillated by a crank m^{14}. The looper c^{12} is carried by a rocking shaft c^{11}. The thread f^5 after passing through a guide f^6 is led over fixed rollers f^7 and f^8, between which is a third roller f^4 adjustably mounted in the slotted head of an arm f^2. The movement of the last roller pulls off sufficient thread from the supply for each stitch.

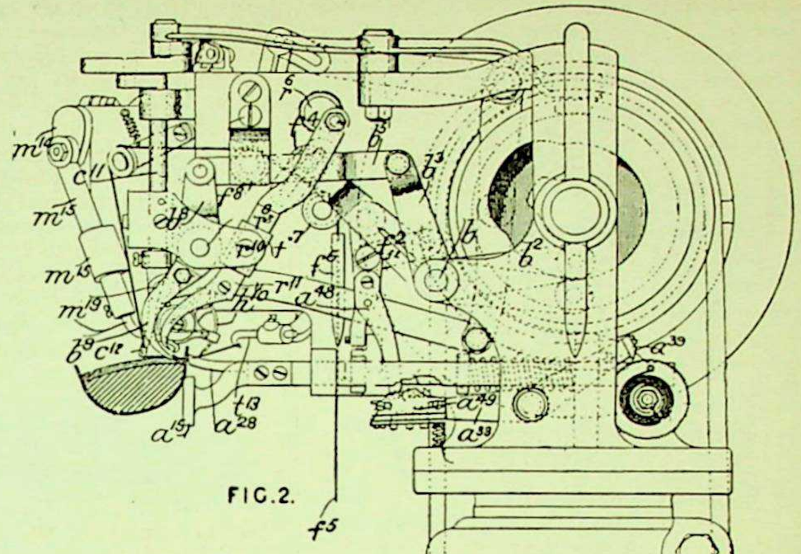


FIG. 2.

FIG. 8.

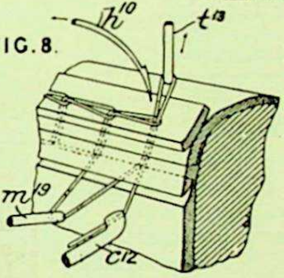
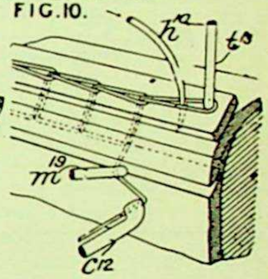


FIG. 10.



8133. Inslee, W. H., [*Singer Manufacturing Co.*]. March 30.

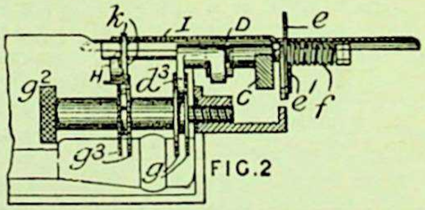


FIG. 2

Sewing-machines, trimming or cutting in.—Relates to means for trimming the edge of the fabric during sewing. C is the feed-bar, on which is carried a rock shaft D, oscillated by a cam on the main shaft. The rock shaft carries one blade e of a cutter, the other one e^1 being adjustably fixed on the feed-bar. The blades are pressed together by a spring f. The whole cutting-device can be slid laterally for purposes of adjustment by a screw g^2, which has a pair of discs g embracing an arm d^3 projecting from the rock shaft D. A second pair of discs g^3 embrace another arm k, and thus actuate a plate I for closing the hole in the cloth plate through which the cutter protrudes. A spring H engaging with the discs g^3, which are notched for the purpose, keeps the device in adjustment.

8170. Lake, H. H., [*Goodyear Shoe Machinery Co.*]. March 30.

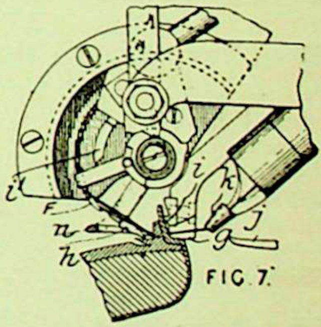


FIG 7.

Boot-sole stitching-machines.—Relates to a machine for basting a lasted upper to the insole, and at the same time extracting the lasting-tacks close to where the basting-stitches are being formed. The permanent welt-sewing can thus be done immediately after lasting. Fig. 2 shows a general view, and Fig. 7 an enlarged view of the parts of the machine, which comprises a curved needle F, which, together with a presser-foot h, is carried on a sliding head moving lengthways of the seam so as to effect the feed. A second presser-foot n is pivoted to a fixed part of the machine. This second presser is in action while the needle and the other presser-foot are moving back after the feed to take up position for a new stitch. During the feed it is retracted, while during the remaining operations it assists the other presser-foot in holding the work against a fixed support *g*. h^1, n^1 are levers for operating the presser-foot manually when required. A cutter i^1, mounted on the needle-carrier, co-operates with a

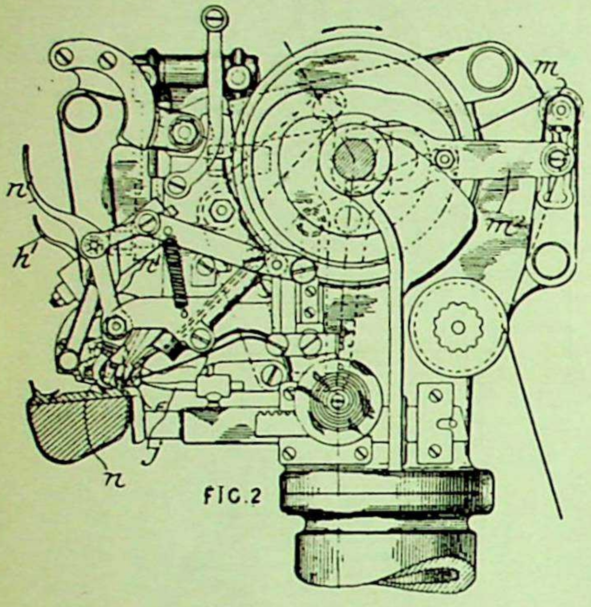


FIG. 2

fixed cutter *i*, and trims off the edge of the upper just after the needle has entered the work. A tack extractor *j* has forward and upward movements to enable it to remove the lasting-tacks immediately in front of the needle. *k* is a thread-guide, in which rotary motion is given to enable it to lay the thread in the hook of the needle. *m* is the take-up, operated by a cam-driven lever m^2.

8232. Lovesay, H. March 30.

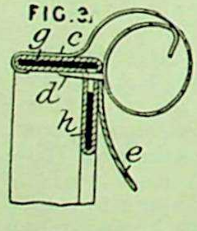


FIG. 3.

Sewing, work-holders for.—In the manufacture of leather bags &c. the work is held during the sewing operation by means of one or more spring clamps. Each clamp is provided with two arms *d*, *c*, of which *d* is in the form of a pin, which is passed through the material *e* of the bag and between the covered members *g*, *h* of the bag frame, while the other is in the form of a hook which clips the upper member of the frame as shown. The arm *g* may be provided with an eye, into which the pin *d* is inserted; or the two arms of the clamp may be hinged together and held by a movable link.

8718. Inslee, W. H., [*Singer Manufacturing Co.*]. April 6.

FIG. 1.

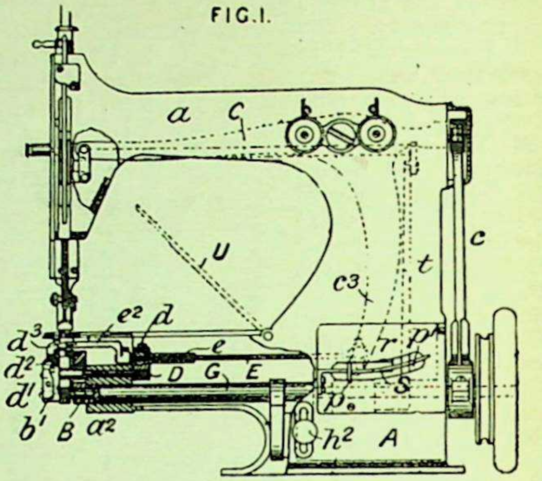
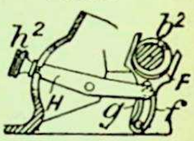


FIG. 7.



Double-loop stitching-machines.—Relates to machines which make a double chain-stitch of the Grover and Baker type. The frame has an overhanging arm *a* and a work-supporting arm a^2 provided with a cover-plate U, which is made to lift. The driving-shaft B actuates the needle arm C by means of a pitman *c*, and also has an eccentric b^1 at its outer end which engages with an arm d^1 on a rock shaft D. The shaft D has an arm *d* which carries a sleeve *e* by means of a ball-and-socket joint. A rod E, connected to an arm c^3 projecting downwards from the needle arm C, passes through the sleeve *e* and carries the looper e^2. A to-and-fro as well as a sideways movement is thus given to the looper. The loop of upper thread is opened for the looper *e* by a projection d^3 in a plate d^2, carried by the arm d^1 of the rock shaft.

Feed.—The shaft B has another eccentric b^2, Fig. 7, embracing a fork F turning on a pivot on an arm H, which can be adjusted and clamped by a nut h^2 A slot *f* in the fork engages with a pin on an arm *g*, which is connected to a sleeve G. The sleeve communicates its oscillations to a block carrying a feed-dog, which is moved vertically in the block by the eccentric b^1.

Trimming or cutting.—A trimming-device is operated by a pitman *t*.

Governing needle thread.—The needle thread passes through holes in the opposite vertical sides of a frame moving with the needle-bar, and also through a slot in a fixed vertical bar placed between the sides of the frame. The thread is pressed against the side of the slot by a light spring.

Governing under thread.—The take-up for the under thread is effected by a wire loop *r* carried in the arm c^3, and acting in conjunction with a fixed loop *p* and a slotted plate S projecting through an opening p^1 inside of the frame A. The thread is passed through the loops *r* and *p* and the slot in the plate S, and the take-up is effected by the motion of the loop *r*.

8787. Lake, H. H., [*Hendley, H. E.*]. April 6.

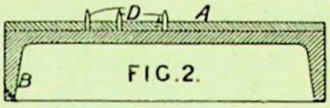


FIG. 2.

Embroidery.—A pattern plate for use in making pattern or stencil sheets, used in embroidering, consists of a base-plate B covered by a sheet of leather, or other suitable yielding material A, in which are inserted pins D arranged in the form of the desired pattern. The pins are type high, and the plate is placed on the bed of an ordinary printing-press.

8975. Midelton, W. J., and **Barlow, P.** April 8.

FIG. 1.

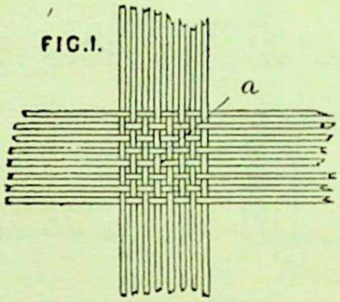


FIG. 3.

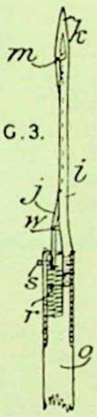
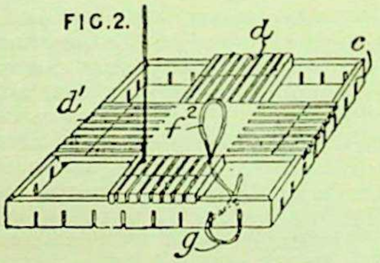


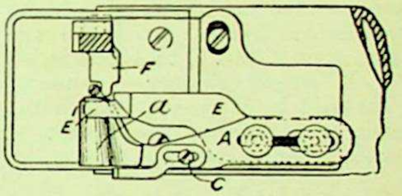
FIG. 2.



Darning.—A patch, such as shown in Fig. 1, having loose threads, is placed in a frame *c* which, again, is laid over the hole to be darned. The threads are secured to the fabric by a specially-constructed needle or group of needles. The frame *c* may be of wood or metal, and has on its upper side a cross-piece *d*, *d*¹, the ends of which are slotted as shown. The patch is placed on the underside of this cross-piece, and each thread *b* is drawn up through the corresponding slot, looped at *f*², and passed through slots in the edge of the frame *c* to form a loop *g*. The latter may be held in place by tissue paper pasted on the edge of the frame. The fabric to be darned is placed in a darning-egg or the like and the frame *c* laid over the hole. The darning-needle is then inserted into the fabric in line with one of the loose threads, and at a suitable distance from the patch, and worked in and out until the loop *g* is reached. This is then seized by the needle and drawn through the fabric. All the threads are similarly drawn through either by a single needle or a group of needles. The needle employed is shown in Fig. 3, and consists of two parts *i* and *j*. The former is screwed into the handle *o*, while the other can be moved through a guide *w* and is pointed to fit into a recess *m* in the part *k* forming the eye. This part *j* can be drawn out of the said recess, to allow a thread to be passed into the eye, by means of a knob *s*, a spring *r* returning it when the knob is released.

9059. Singer Manufacturing Co. and **Shatford, P.** April 9.

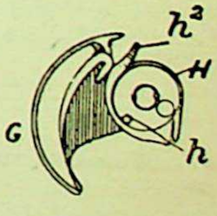
FIG. 3.



Leather-sewing machines.—An improved welting-attachment for use with leather is described. The plate A is doubled over at *a* so as to hold the welt. It is adjustably secured over a guide-plate E (also adjustable) which has a horn E¹ to guide the work into place. The guide C is adjustable on the welt-holder A. F is a picked-up stitch presser-foot, having a spur which, as the work is fed forward, drops into the hole last made by the needle and gives the work a finish. This presser-foot is provided with an adjustable stop, whereby the spur is made to drop properly into its hole when the length of the stitch is varied.

9365. Inslee, W. H., [*Singer Manufacturing Co.*]. April 13.

FIG. 4.



Lock-stitch shuttle sewing-machines.—Improvements are described in machines having rotary or oscillating shuttles which carry the needle thread round a locking-thread contained in a stationary bobbin case. Fig. 4 shows the arrangement adopted in a Singer machine. The shuttle G is pivoted at a point *h* to the stationary bobbin case H, which is held by a horn h^2 engaging some part of the framing. This placing of the bobbin case eccentric to the shuttle enables a smaller loop of needle thread to be used, and allows the travel of the shuttle to be reduced so that the machine can be run at a higher speed. Empty spools are ejected from the case H, by actuating a lever I, Fig. 3, to which is jointed the plunger i. A second plunger i^3 connected, by a link, to the said lever moves aside a plate b^5 so that a fresh spool can be put in place. A spring i^4 returns the lever to its place.

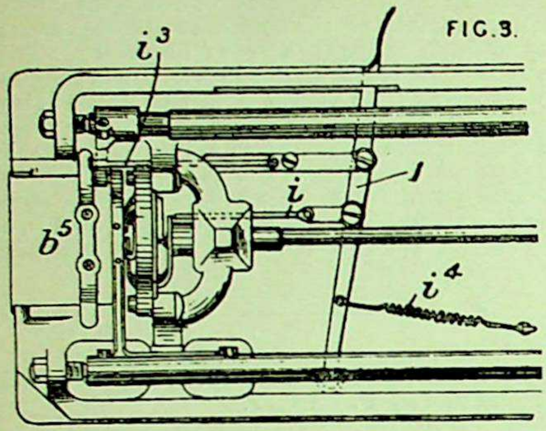


FIG. 3.

9366. Inslee, W. H., [*Singer Manufacturing Co.*]. April 13.

Sewing-machines, governing needle thread in ; overedge-stitching machines.—Relates to a method, more especially adapted for overedge-stitching, of varying the tension of the thread from stitch to stitch. The rod c, which oscillates in the barrel b, carries nuts c, which press springs against the tension discs d^1. Thus, the pressure between the lower discs increases, while that between the upper diminishes, and *vice versâ*. The rod c is reciprocated by a cam on the shaft F, which also carries a ratchet-wheel operated by suitable mechanism from the main shaft.

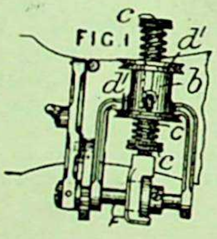


FIG. 1

9881. Cohn, C. W. April 20.

Embroidery.—Relates principally to an improved tool for cutting or trimming embroidered fabrics and other sheets &c. A suitable cutter, having transverse and side cutting-edges, is caused to be rapidly projected from and withdrawn into a hollow handle C. The cutter slides in a suitable socket within the handle, and is connected with a crank or eccentric operated by a small electric motor B mounted in brackets on the upper end of the handle. The whole apparatus is held in the hand as shown, the lower end of the handle being shaped so as to facilitate the guiding of the cutter along the edge of the embroidery &c.

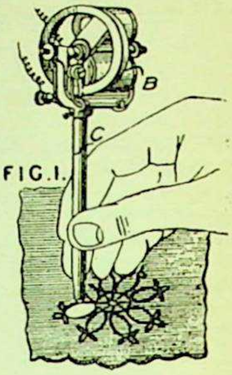


FIG. 1.

9884. Schoeneweiss, A., and **Röchling, H.** April 20.

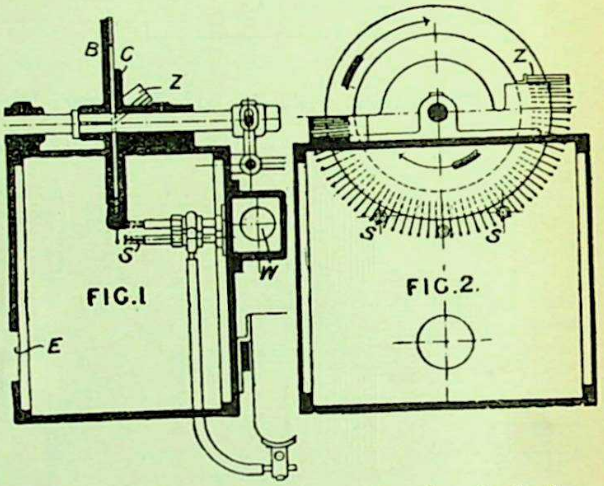


FIG. 1 FIG. 2.

Sewing-needles.—Appliances are described for removing the burrs produced during the punching of the eyes in needles, for sharpening the latter, and for the treatment of like articles. The needles are rolled between two bands, one of which is stationary, and they are thereby subjected all round to the action of the blast. In the apparatus shown in Figs. 1 and 2, the needles are fed, through a shoot Z, between a stationary plate C and a rotating disc B, which are, preferably, faced with india-rubber or some other elastic material. The disc B is pressed towards the plate C by means of a weight or spring. Three nozzles S are shown supplied with air by a pipe W. The box is exhausted through a pipe E, and the needles are delivered on to a table. Various modified forms of apparatus may be used, *e.g.*, the needles may be passed by a travelling band over a flat, concave, or convex surface, by a disc over a curved band, or between conical surfaces. In place of being fed through a shoot, the needles may be supplied to the travelling disc or band by a grooved, cylindrical, or conical roller. When a sand blast is used to sharpen the needles, the nozzle is inclined at an acute angle to the axis of the needle.

10,281. Domenget, H. A. April 24.

FIG. 2.

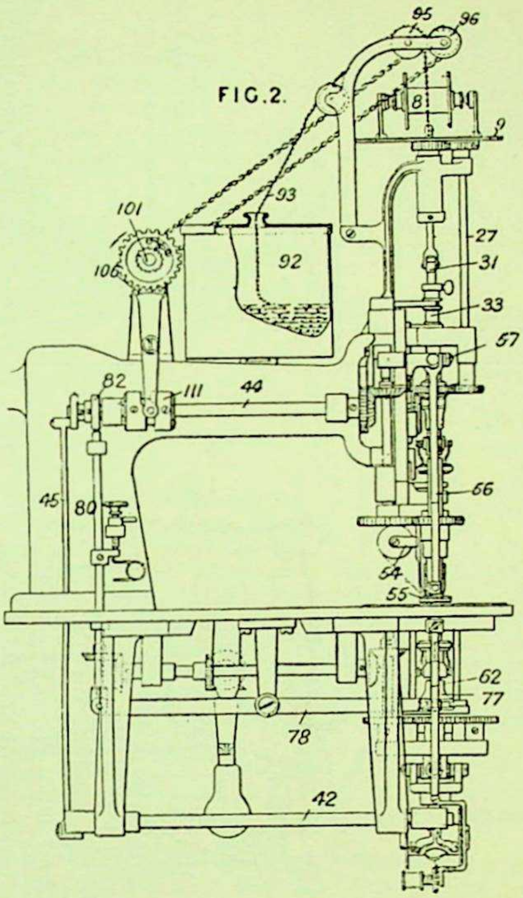


FIG. 3.

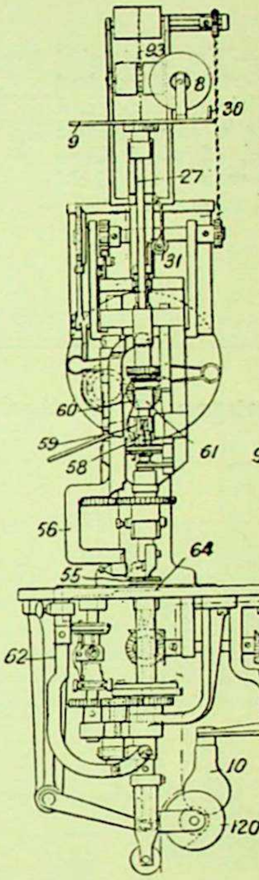
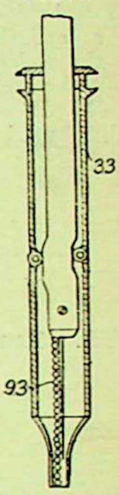


FIG. 7.



Sewing-machines, attaching beads in.—The invention relates chiefly to this class of machine, though the feed is generally applicable. The stitch employed is the Grover & Baker, double-loop stitch, but by suitable modification an ordinary chain stitch or a lock stitch may be used. The needle and looper mechanism are of ordinary construction. The looper is mounted on a sleeve having a helical slot in which a pin, mounted on a central vertically-reciprocating rod, moves and thus gives an oscillating rotary movement to the looper, which is horizontal and circular in shape. This movement is communicated from a shaft 44 which makes one revolution to every stitch by a connecting-rod 45 and a rock-shaft 42. The needle thread is carried on a spool 8 mounted on a plate 9 which is rotated by gearing from a shaft 27. This shaft is geared up to a handle 10 by which the direction of feed is governed, and the position of the plate 9 thus follows the feed. The thread, after passing through a guide 30 and under a tension roller 31, descends to the needle through a tube 33 which encloses the needle-bar and the movements of which also follow the feed. The underthread is carried by a bobbin 120, and a bobbin 54 carries a thread which is twisted round the upper thread and the string of beads in an ordinary way, and thus causes the beads to be attached to the fabric. The string of beads 93 descends through the tube 33 beside the needle which receives a slight lateral displacement at each reciprocation and causes it to move down behind the bead and push it into its proper position. The beads are contained in a receptacle 92 from whence they are withdrawn by rollers 95 and 96 actuated by a chain or other gearing from a shaft 101 operated by a toothed sector 106 and pawl and ratchet gearing from a cam 111 on the shaft 44.

Feed.—This is effected by dogs 55 and 64, the former above the work and the latter, which has no vertical movement, below it. These dogs grasp the work and cause it to be moved in any direction according to the position of the handle 10. The upper feed-dog is carried by an arm 56 universally jointed at 57, and vertically reciprocated by a lever 58 pivoted at 59 and having an arm working on an inclined plane 60 on a sleeve 61 which moves vertically on the tube 33. The arm 56 is carried round by the tube 33, which is rotated by the handle 10, the motion of which is communicated to a horizontal shaft, and thence by bevel gearing and shafting, not shown, to the tube. The lower feed-dog is mounted on an arm 62 and moved round in a similar way. Its feeding motion is derived from the shaft 44 through a cam 82, a rod 80, and a lever 78 which vertically reciprocates an inclined surface 77 acting on the arm 62.

10,384. Vaughan, E. W.
April 26.

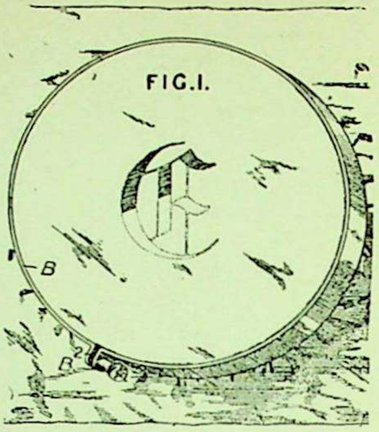


FIG. I.

Embroidery.—The material to be embroidered is stretched over a cylindrical hoop, and held there by a steel elastic band B, the ends of which have lugs B^2, B^3 which are held together by a bolt and nut.

10,473. Jackson, J. E. April 27.

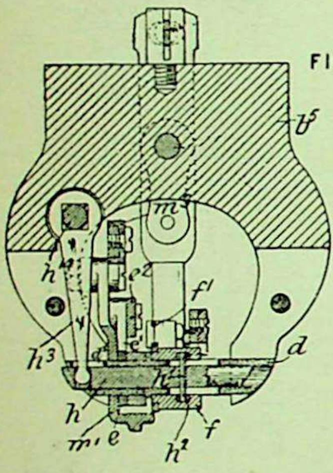


FIG. 11.

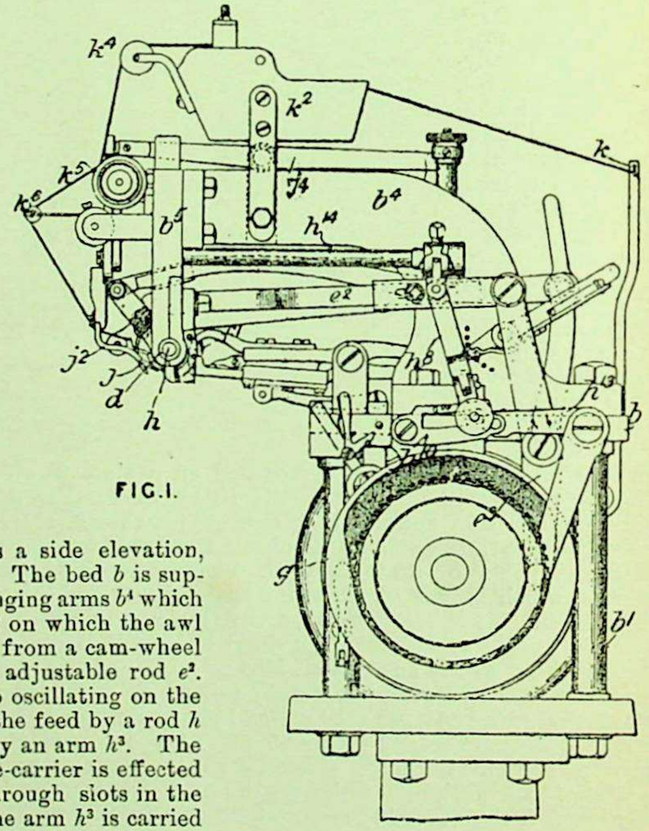
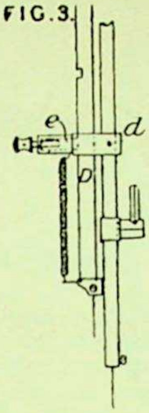


FIG. I.

Boot-sole stitching-machines.—Fig. 1 shows a side elevation, and Fig. 11 a front elevation, of the machine. The bed b is supported by standards b^1, and has a pair of overhanging arms b^4 which carry a head b^5. In this is carried a sleeve d on which the awl carrier e oscillates, the motion being derived from a cam-wheel g and communicated by a lever e^3 and an adjustable rod e^2. The needle f^1 is mounted in a carrier f, also oscillating on the sleeve d, and moved laterally so as to effect the feed by a rod h situated inside the sleeve and reciprocated by an arm h^3. The connection between the rod h and the needle-carrier is effected by a pin h^1 passing through the rod and through slots in the sleeve, and having rollers h^2 on its ends. The arm h^3 is carried by a shaft h^{14} which is oscillated by a link h^8 adjustably connected to a link h^{10} so that the feed can be varied. The cam-wheel actuates the link by a lever h^{13}. A guide is provided for giving support to the hooked needle. The looper j, which lays the thread in the hook of the needle, is tubular, and describes approximately the four sides of a square, being positively actuated in each direction. Its vertical motion is communicated from a cam by a lever j^4, the horizontal ones being similarly communicated by mechanism, not shown. The thread is shown passing through an eye k, through a gumming or waxing trough k^2, over a guide-roller k^4, a tension device k^5, and thence over a spring take-up k^6 to the looper. The take-up is mounted on an adjustable spring, but is not otherwise actuated.

11,056. Inslee, W. H., [*Singer Manufacturing Co.*]. May 4.

FIG.3.



Multiple-needle machines.—Relates to means for throwing one of the needles of a double-needle machine into or out of action. The main needle bar carries a crosshead *d*, in which slides the second needle-bar D, which is urged out of action by a spring. A catch *e* on the crosshead engages with a notch on the bar D when the latter is pushed down by the operator. When the catch is withdrawn, the needle-bar D is again made inoperative.

11,057. Inslee, W. H., [*Singer Manufacturing Co.*]. May 4.

Lock-stitch shuttle sewing-machines.—Relates to lock-stitch machines, more particularly of the class in which a vibrating shuttle-lever beneath the work-plate is operated from a crank on the main shaft. The feed-mechanism is shown in Fig. 10. The feed-bar L^8 is moved upwards and forwards by the cam L and downwards and backwards by a spring, its backward movements being limited by the contact of an adjustable stop L^3 with the inclined projection L^9 on the bar. T^2 is the take-up and pull-off lever operated by the cam T. The tension discs are pressed together through a lever P^3 by the spring P^4, the lever being operated by an eccentric R^2. For lifting the presser-bar when the needle is in the work, to the sliding rod X^2, operated by a cam X, is pivoted a horizontal gripping-arm Y, with an opening for loosely receiving the presser-bar, so that the latter rises with the rod X^2, but at other times moves freely through the opening in the arm Y. The needle-bar is provided with a groove for carrying off surplus oil.

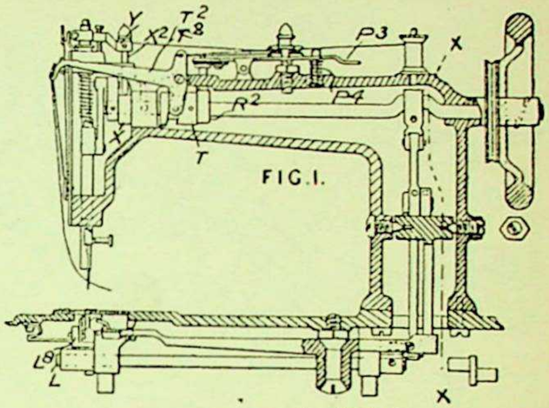
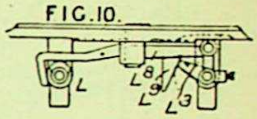


FIG.1.

FIG.10.



11,082. Brookes, A. G., [*Brooks, J. W.*]. May 4.

FIG 14.

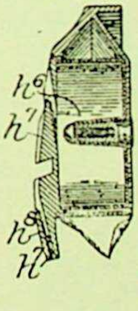
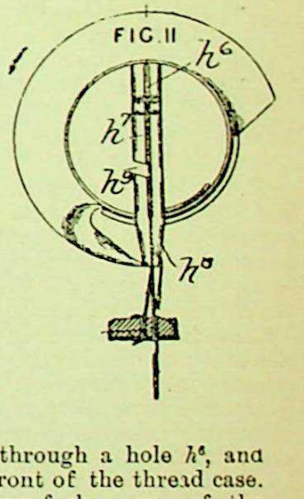


FIG.II



Boot-sole stitching-machines.—The needle-holder c^9 is mounted loosely on a rod *b* to which the awl holder b^1 is fixed. A needle guard is carried frictionally in the hub of the needle-holder, its motion being limited by a suitable stop. The awl and needle are operated by cams on the main shaft and by toothed segments, one of which is shown at d^2, while the awl is also moved sideways for feeding the work by arms a^7 connected to a shaft *a* which is actuated by a roller a^4 in contact with a cam. The awl is restored laterally to its position after each actuation by a spring *s* within the shaft *a*, and its motion can be limited by an adjustable stop so as to regulate the feed. The needle thread passes through a hole f^3 in the top surface of the work support F, and out through another hole in its front. It is checked by a spring f^4, and thence passes to a take-up arm *m* fitted with an adjustable tension roller *n* and guiding-rollers m^7, m^8. It is supplied direct to the take-up arm from the waxing-pot P^1. The rotary hook containing a thread case for the secured thread is shown in Figs. 11 and 14, the bobbin being carried by a central pin, while the thread passes upwards through a hole h^6, and down through a second hole h^7 in a downwardly-projecting nozzle h^8 on the front of the thread case. The quantity of thread given out for each stitch is regulated by an oscillating fork *r*, one of the fingers r^2 of which reaches the thread through a notch h^9 and draws from the bobbin sufficient for a stitch; the other finger r^3 then locks the thread. The amount of thread drawn off can be adjusted. The hook is driven by worm gearing, the pitch of the threads of which varies so that it moves slowest when in the position shown in Fig. 7, and quickest after engaging the loop of needle thread. The stripping of the thread from the needle is effected by the hook. The thread is caused to engage with the needle-hook by an arm *l* moved in two different planes by rollers l^4 and l^5 engaging with cams. P is a presser-foot mounted on a vertically-moving slide and actuated so as to periodically lock and unlock the work by an arm p^{25} on the end of which is a double pawl p^{23}. The ratchet teeth on the slide with which the pawl engages are protected by shields fixed to the main frame, so arranged that the same amount of travel is given to the presser-foot whatever be the thickness of the work. The machine is adapted to form either an ordinary or a knotted lock stitch, according to the side of the needle thread on which the rotary hook is placed. The machine is kept warm by suitable circulation pipes, different waxpots are provided for each thread, and the heating-medium can be turned off from either as required.

FIG 3

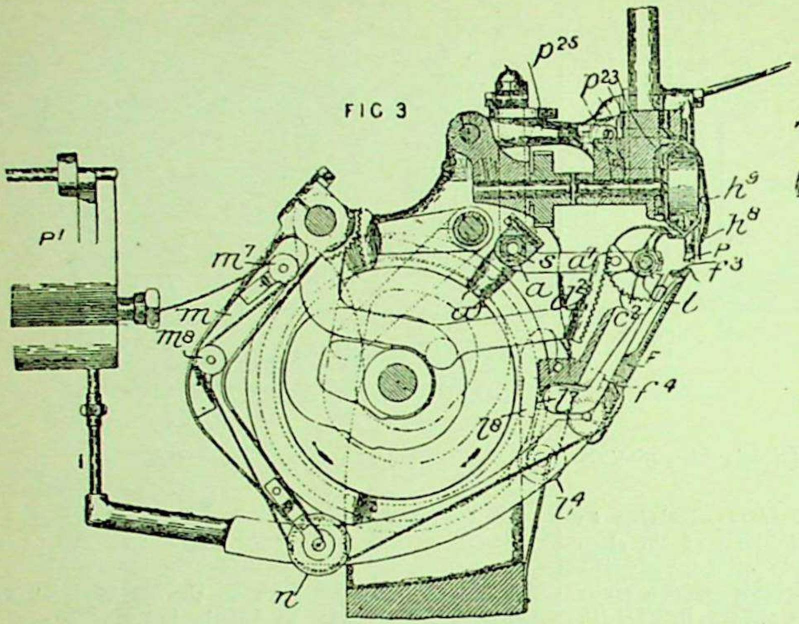
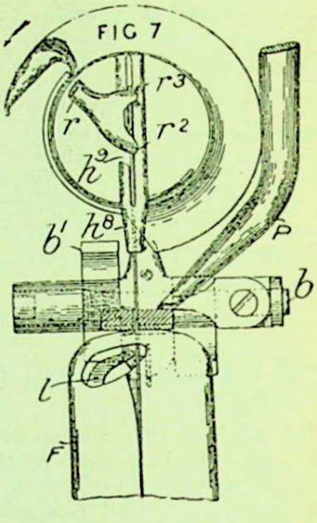


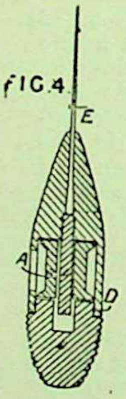
FIG 7



11,209. **Barry, E. T.** May 5.

Awls for sewing ; seams ; sewing-needles.—Consists of apparatus for making a lock-stitch seam in leather by hand. A wooden case which unscrews at D contains a thread bobbin A. The thread, which is specially made, is six-cord cable laid. A taper hooked needle E is fixed in the case, which forms a handle and is held in the right hand. The thread is drawn out past suitable tension devices. Another similar case, but without a needle, is held in the left-hand. The work is perforated by the needle, the taper shape of which enables the operator to make a hole of the desired size, and the thread from the left-hand case is laid in the hook of the needle. The loop is then drawn through the work, and the right-hand case passed through it. The stitch is then set.

FIG.4



11,424. **Brown, R.**, and **Quinn, J.** May 7.

Lock-stitch sewing-machines ; multiple-needle machines. — Improvements are described on machines for executing ornamental sewing in which a pair of needles are employed, one on each side of a central punch. They are shown as applied to an overedge-stitching machine having oscillating hooks

FIG.2.

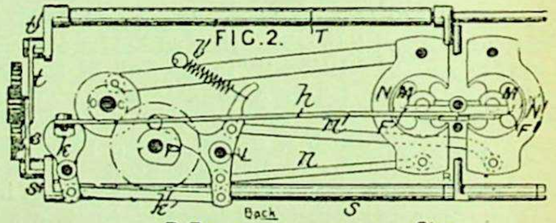


FIG.4.

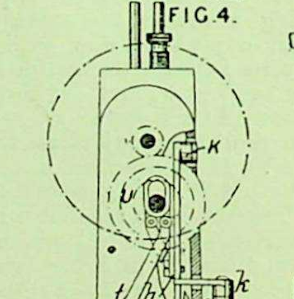


FIG.7

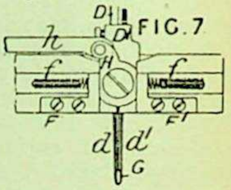
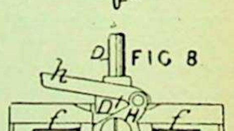


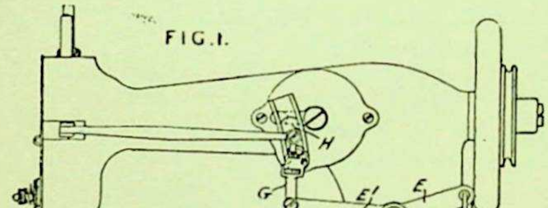
FIG 8



of the Singer type. The needle-bar D, Figs. 7 and 8, carries a crosshead D^1, by which the central punch G is carried, and on which are mounted a pair of slides F and F^1, in which the needles d, d^1 are secured. The punch is grooved at the sides, and may be perforated at the point to enable the needles to lie as close as possible to it. Between the slides is centered a cam H, which can be placed in the position shown in Fig. 8 to separate the needles, or into that shown in Fig. 7 to allow the springs f, f to push the needles close up to the punch. This cam is operated by a rod h which, at the other end, is jointed to a swing-link K, Figs. 2 and 4. This link is oscillated by a forked arm k connected by a rod k^1 to a three-arm lever L rocked by a cam P and a spring l^2. The shuttles or hooks M, M are mounted in races attached to carriers N, N^1, which are moved to and fro simultaneously with the needles by rods n, n^1 connected to the lever L. The feed-bar is operated by oscillating bars S, T through a cam U, rods s, t, and cranks s^1, t^1, Fig. 4. This arrangement of needles and shuttles is applicable also to hem-stitching machines.

11,561. Singer Manufacturing Co. and Cousland, H. May 10.

FIG. 1.



Overedge-stitching machines; ornamental sewing; feed.—Relates to means for shortening or stopping the feed and lengthening the overseaming stitch when barring buttonholes, applicable also to other machines when used for fancy sewing. A three-armed lever is centered on the framing; one arm E is connected by a rod F to a treadle, the second arm E^1 is linked to the sliding block H by a rod G, and the third arm E^2 passes through a slot in the bed-plate and bears against a fork k adjustably secured to the end of the feed-regulating lever. Normally the arm E^1 is kept against the stud e by a spring e^1. On depressing the rod F the feed is shortened or cut off, while the arm E^1 alters the position of the block H and increases the length of the overseaming stitch. In fancy stitch machines, one or other of the arms E^1, E^2 may be dispensed with.

12,022. Scetrini, G. H., and Bridger, H. K. May 14.

FIG. 4.

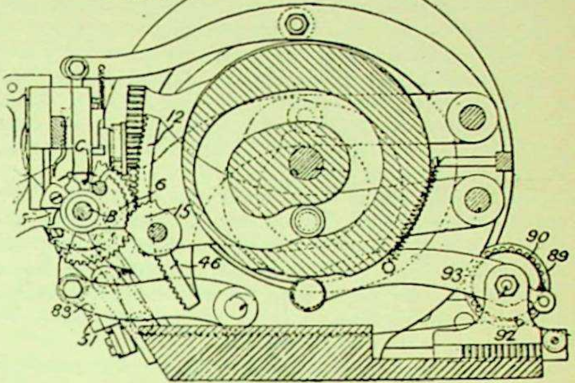


FIG. 5.

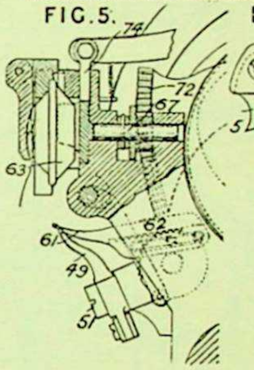
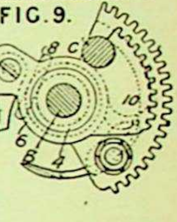


FIG. 9.



Boot-sole stitching-machines; presser-feet; perforating-devices; feed.—The presser-foot 5 is attached to a carrier 6 which is mounted on the hub 4 of the awl carrier. The two carriers are given independent rotary motions by cam-actuated sectors 12 and 15, but they are connected by a pin 8 so as to perform their lateral feeding-movement in concert. This movement is given to them by a shaft C, actuated by a cam and having a lug 10 lying in a circular groove in the carrier 6, so that the latter is free to revolve. The cam for actuating the presser-foot operates through the medium of a toggle device which has a spring abutment and is thus enabled to compensate for varying thicknesses of work. The presser-foot can also be lifted by a hand-lever which is weighted so as to resist the action of the spring.

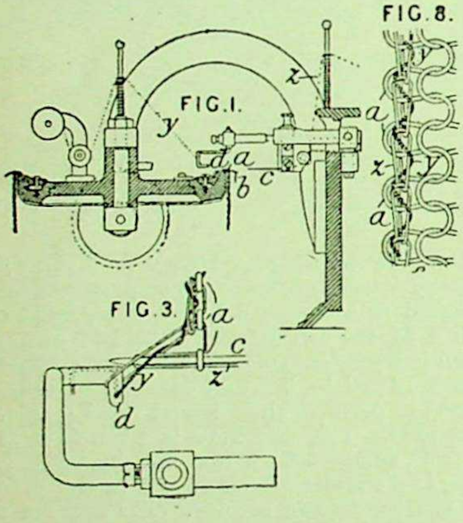
Needle-driving.—The needle carrier is fixed on a shaft B, on which the awl carrier is loosely mounted, and is driven by a cam-actuated sector 46. It is provided with the usual needle shield.

Needles, hook, threading-devices for; governing needle thread.—The thread presenter 49 is pivoted on a sliding carriage 51, and thus describes a circle round the point of the needle so as to lay the thread in its hook. Just before this, however, a thread puller 61, mounted on a carriage 62, which is actuated from the needle shaft B, engages with the thread between the work and the thread presenter, and draws off enough thread to make one side of the loop. Movement of the thread in the needle is thus avoided. 83 is the usual take-up arm for the thread, which also passes over a tension device 89. This consists of a wheel which is braked by a band 90, controlled by a cam-actuated lever 93 so as to release the brake periodically and allow thread to pass. The tension is mounted on a bracket 92 which is moved by the above-mentioned toggle device for actuating the presser-foot. The effect of this is to shift the position of the arm 93 relatively to its cam according to the thickness of the work and so to release the tension earlier or later.

Lock-stitch hooks and hook mechanism. — The rotary hook 63 is driven by a shaft 67 intermittently rotated by a cam and a sector 72, a pawl and ratchet being introduced so that the hook rotates in one direction, though intermittently. Between each rotation it is locked by a bolt 74 which is operated by a cam.

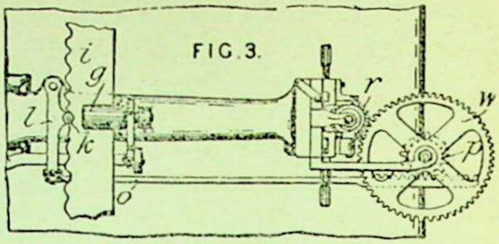
Needles, hook, cast-off devices for.—The cast-off is effected by an arm 77.

12,033. Köhler, J. May 15.



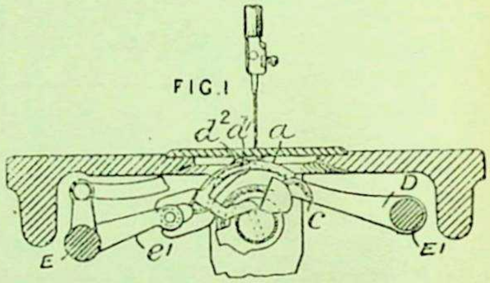
Knitted-fabric sewing-machines. —Relates to a link-stitching machine for sewing together the adjacent edges of knitted fabrics, or for securing an open row of meshes. Fig. 8 shows the stitch produced, *a* being the threads of the fabric, *z* a thread forming an ordinary chain stitch, and *y* a second thread wound round the former. Fig. 1 shows the general arrangement, and Fig. 3 the needle and looper on a larger scale. The fabric is hung on points *b* in a circular or straight frame and is sewn by a straight or bent needle *c* actuated by a cam. A looper *d* moves in a circular path round the needle, and receives a second thread *y* which it lays into the stitches formed by the needle thread *z*.

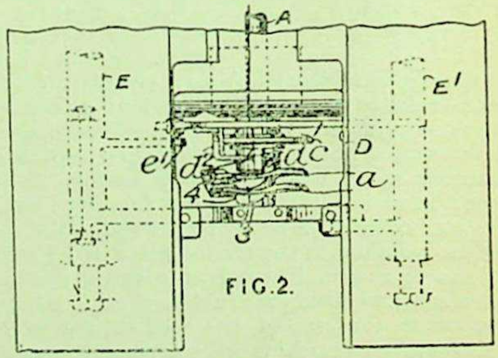
12,044. Thompson, W. P., [*Eder, R.*, and *Stein, G.*]. May 15.



Embroidery.—In a sewing-machine for embroidery the movements of the feed-bar, ordinarily effected by hand, are, according to the present invention, performed mechanically. A pattern strip *i*, carried on the top of the fixed arm of the machine, is fed forward by a roller *g* operated from the main shaft by a pawl and a system of levers. Against the edge of this strip, which is suitably shaped, a lever *l* carrying an antifriction roller *k* presses, and the movements of the lever are communicated to the presser-foot by a chain, or, as shown, by a rack *o* and gear-wheels *p*, *w*, and *r*.

12,248. Inslee, W. H., [*Singer Manufacturing Co.*]. May 18.





Double-loop stitching-machines; multiple-needle machines.—The invention is applicable to single as well as to multiple needle machines, the application being shown to one with two needles. The thread-carrying loopers *a* are oscillated by a shaft A and have projecting portions 3 terminating in shoulders 4, turned towards their corresponding needles, and serving as loop spreaders. The shoulders 4 pass the needles at the extreme forward part of the motion of the loopers, and during the return movement their threads are caught in hooks projecting downwards from the under surface of the throat plate. The loops are held in this position until the needles have passed their threads through them. The rocking-shaft A is also provided with a take-up arm c acting in conjunction with two eyes, one of which is in a lever D, pivoted on the feed lifting shaft E^1, and operated by an arm e^1 projecting from the shaft E which moves the feed-bar horizontally. The other eye d^1 is in an arm d^2 projecting from the lever D. The throw of the take-up device thus depends on the length of the stitch.

12,249. Inslee, W. H., [*Singer Manufacturing Co.*]. May 18.

FIG. 8.

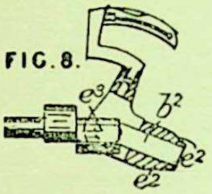


FIG. 3.

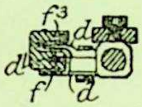


FIG. 2

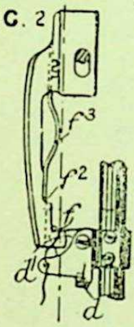
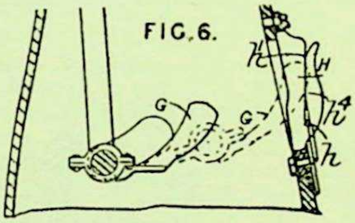


FIG. 6.



Double-loop stitching-machines.—The forward end of the main shaft is bent at b^2, to engage parallel flanges e^2 on the looper carrier, which oscillates on trunnions e^3, and is thereon also given a slight lateral movement by an eccentric. The take-up device for the looper thread is shown in Fig. 6. The plates H and h^4, attached to the frame, fit close enough at h^1, to exert a frictional drag on the thread, which is pulled up between them across the eyes h as the looper moves back, by the forked plate G, attached to the main crank. The needle-thread take-up device is shown in Figs. 2 and 3. The needle-bar carries two plates d, with thread eyes, which straddle the finger f on a fixed bracket, and a fin d^1 which moves in a slot in the finger f. As the needle descends the thread is pulled over the finger f into a loop, which, when the needle rises, is raised by the fin d^1 on to the ledge f^2 and momentarily held by a spring f^3 when the needle again descends.

12,346. Darling, J., and **Clarke, T.** May 19.

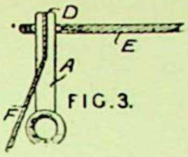


FIG. 3.

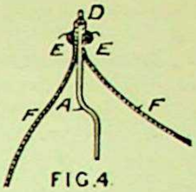
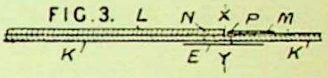


FIG. 4

Needle-threaders. — Relates to threaders which may be attached to spools, cards, or hanks of wool or the like. The plate A has a slit D at the end in which the thread F is placed. The plate with the thread on it is then forced through the eye of the needle E.

12,503. Sunderland, J. W. May 20.

FIG. 3.



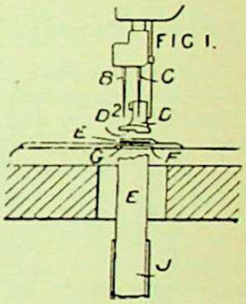


FIG. 1.

Multiple-needle machines; guiding materials; presser-feet. — Relates to a method of, and to a machine for, sewing pocket holes and flaps. A tape E is led from a roll J underneath guides F and G, and thence under the presser-foot D, one side of which is recessed as shown at D^2. In the enlarged view, Fig. 3, K is the material to which the flap L is to be sewn, M being the lining. The flap L is guided by the shoulder of the recess D^2, while seams N and P are simultaneously sewn by the two needles B, C. After sewing, the material is cut at X—Y, thus forming a hole through which the lining is then drawn. The flap is folded over in the usual way.

13,075. Morse, A. B. May 27.

FIG. 2.

Sewing-machine cops. —A number of different threads a^1 are wound simultaneously on the same support or core, or on different supports b placed close together on one spindle. The threads support one another so that a number of discs of thread, which can be subsequently separated from one another as shown, are produced. The threads may be of different colours.

13,513. Lake, H. H., [*Campbell Machine Co.*]. June 1.

Sewing - machines ; boot - sole stitching-machines ; lock-stitch shuttles and shuttle mechanism.—Relates chiefly to machines for boot soles, but is applicable to machines for heavy work generally. The hooked shuttle A, Fig. 18, is disc-shaped and is oscillated in a circular shuttle race A^1 by a cam-actuated driver *b*. The race A^1 lies in a plane nearly, but not quite, perpendicular to the seam, while the needle B works in a plane exactly perpendicular to it.

Governing under thread.—To enable the machine to be driven at a faster rate, and also to withdraw thread from the shuttle, the race A^1 is caused to recede from the needle as soon as the point of the shuttle has entered the thread loop. The shuttle thread issues from a central orifice. Thread may also be withdrawn by alternative devices consisting of (1) a projection on the shuttle which engages with the thread at each actuation, or (2) a separate finger driven by a cam of its own.

Governing needle thread.—While the shuttle race is being moved, the take-up is caused to dwell and hold the thread taut. As the loop *r* is being drawn through the work, as shown in Fig. 15, the part underneath is engaged by a cam-actuated finger F which prevents the thread from cutting the work. During this operation, the needle-thread tension is locked.

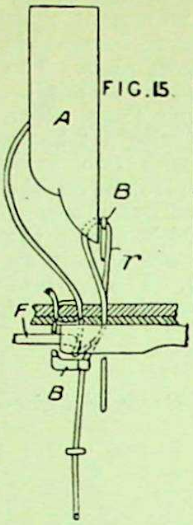


FIG.15

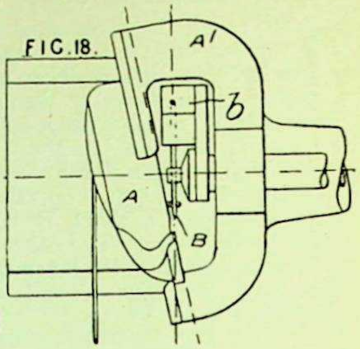


FIG.18.

13,918. Harrap, W. H. June 5.

Basting-machines.— Relates to machines for temporarily sewing pieces of goods end to end for dyeing or other purposes. The ends are overlapped and stitched by two needles carried by a single bar E and making two parallel seams. The needle-bar is actuated by a shaft Q which is oscillated by an eccentric P on the first-motion shaft M. The feed is effected by a pair of rings H with teeth or projections, driven by ratchet-wheels 6 which are actuated by pawls contained in a box 4. The box is moved by levers 2, W which are slotted to receive an adjustable pin whereby the feed is regulated. The lever W is moved by an eccentric U. Any well-known method may be employed for driving the loopers. In the case shown they are driven from the first-motion shaft by a vertical shaft 12 and a horizontal one 11. The feed-bar F has two holes to accommodate the needles, and also rollers G which are cut away opposite the rings H. The work is removed from the feed-rings by a stripper L. 17 is a guard placed in front of the machine.

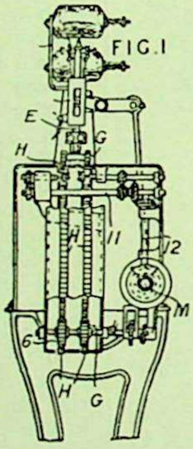


FIG.1

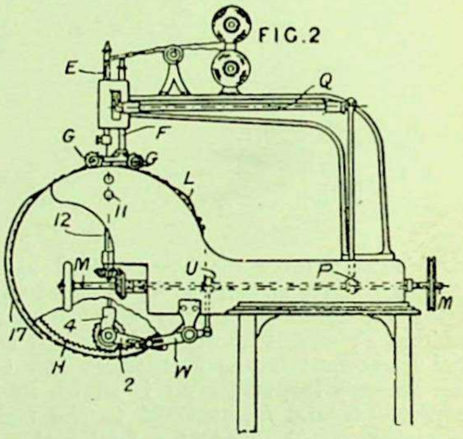


FIG.2

13,967. Brookes, A. G., [*International Goodyear Shoe Machinery Co.*]. June 8.

Boot-sole stitching-machines.—The object is to obtain a heavy pressure on the work while the awl is out of it, a lighter pressure being maintained at other times. The presser-foot e^2 is mounted on a lever e^1 which is pivoted at *e* to some part of the frame. The lever e^1 is actuated through a spring connection e^6 by another lever e^5, also pivoted at *e*, and operated by a lever e^{12} pivoted at e^{13}. The lever e^{12} is actuated at e^{14} by a cam on the main shaft and communicates its motion to the lever e^5 by a pawl e^{10} and a dog e^9. The lever e^1 is pressed upwards uniformly by a spring acting on a frame, not shown, which is pivoted to it at f^1, so that a constant light pressure on the work is maintained.

The lever e^1 is also provided with a dog e^{16} so that it can be locked in its position of greatest pressure by a pawl e^{17} pivoted to the frame and having a rearward extension e^{19} in which the lever e^{12} acts so as to trip it. A spring y tends to keep the pawl in engagement with the dog e^{16}. As the awl is about to leave the work, the lever e^{12} is raised and in turn raises the lever e^5, and through it the lever e^1 which is then locked by the pawl e^{17}, thus applying considerable pressure to the work. As soon as the awl has entered the work, the lever e^{12} moves downward and trips the pawl e^{17}, the pawl e^{10} being simultaneously tripped by a stud 89 on the frame. To release the presser-foot while the higher pressure is on it, a lever X is provided adjacent to the presser-foot lifting-lever $e^{\times}$ so that the two can be actuated together. The lever X acts on the pawl e^{17} through a rod X^1. During this operation the pawl e^{10} is not disturbed, so that on releasing the levers $e^{\times}$, X, the pressure is applied to the work as before.

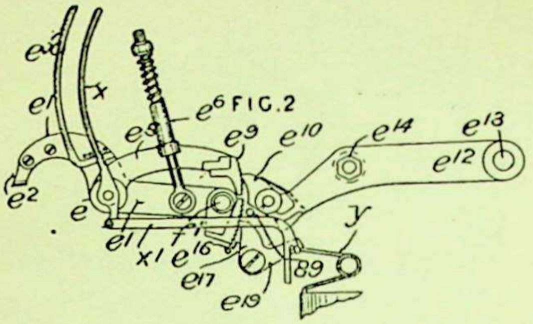


FIG. 2

14,118. Keats, S. June 10.

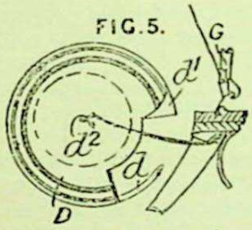
FIG. 5.


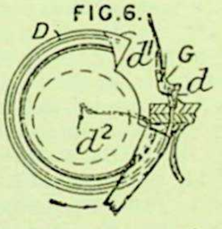
FIG. 6.


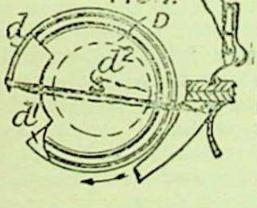
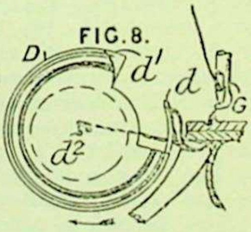
FIG. 7.


FIG. 8.


Lock-stitch shuttle sewing-machines; boot soles, stitching; feed; needle-driving.—This machine is chiefly applicable for boot soles, and the main part of the invention consists in providing a shuttle which also acts as a needle-holder and feed-device. The awl usually employed is dispensed with, the needle, which has a flattened point, taking its place. The shuttle D has a central hole or holes d^2 from which the thread issues. It is formed with a gap, as shown, one side of the gap being occupied by the needle d, while the other side has a sharp edge d^1 which enters the loop formed by the needle. It runs in a race which has a sideways motion for effecting the feed while the needle is in the work, and is also bodily reciprocated to and from the work. Intermittent rotary motion is also given to it by two wheels, one of which is always in gear with teeth on its edge, these wheels being driven by a third wheel operated by a cam. Starting from the position shown in Fig. 6, the shuttle first moves forward until the work is in the gap. It is then rotated until the needle pierces the work and receives the thread from the presenter G. The feed now takes place, and the shuttle rotates backwards so as to draw the loop through the work. It now moves away, so that the work leaves the gap, and it continues to rotate, the edge d^1 entering the loop. The position after half a revolution is shown in Fig. 7. Continuing its motion, the needle sheds the loop and finally resumes its first position shown in Fig. 1. The stitch is not set until the next one is being made, so that the thread is not drawn through the needle. A presser-foot, locked by a cam while the needle is piercing the work, is provided.

15,048. Gammons, W. P., and Bracher, G. S. June 23.

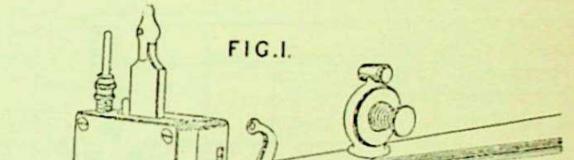


FIG. 1.

FIG. 8.

Hat-sewing machines; binding edges. — The work-support H containing a shuttle or other loop-taking device is arched as shown at I to accommodate the crown of the hat, and its corners are rounded off at *p* to avoid injury to it. The stitch-making devices are of the ordinary type, but the feed-bar F is placed above the work. The throat-plate *c* is raised to the level of the pivoted plate J which covers the shuttle, and two guides are provided, the one K for the edge of the brim and the other N for the binding, which is held between the fingers *s* and *t*. The method of applying the binding is shown in Fig. 8. It is first secured by stitches 4, so that it lies wholly on the upper side of the brim. Its ends are then secured together, and it is sprung over the edge into the position shown, where it remains in virtue of its elasticity. Its free edge may be secured by hand stitching.

15,071. **Boult, A. J.,** [*Tracy, H. R.*]. June 23.

FIG. I.

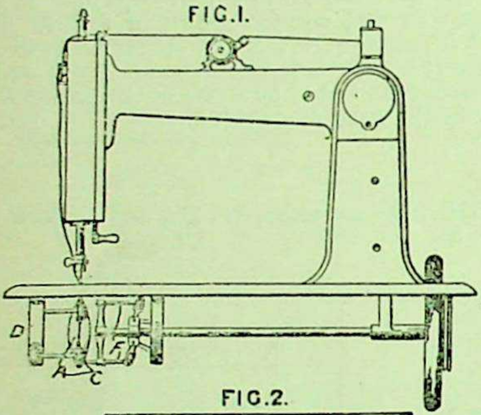
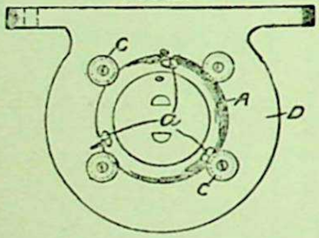


FIG. 2.

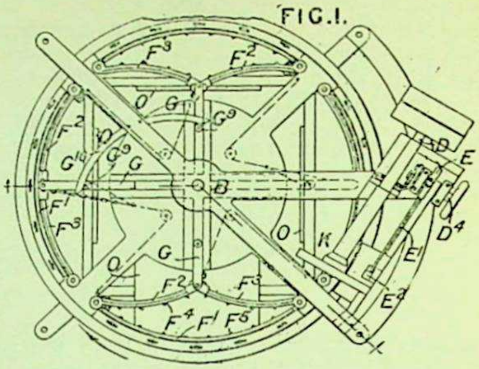


Chain-stitching in lock-stitch machines.—A rotary loop-taker A having recesses *a*, the corners of which are capable of acting as hooks in whichever direction it be rotated, is carried on grooved rollers C mounted on rods projecting from a plate D. The number and disposition of the rollers is such that no two of them can coincide at once with any pair of recesses. When the loop taker revolves in the one direction it forms a lock stitch, and in the other a chain stitch. It is actuated by rods F which are alternately withdrawn so as to clear the loop of thread.

15,243. **Henry, J. W., Gunn, A.,** and **Ward, H. P.** June 25.

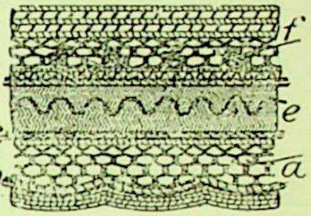
Sack-seaming machines.—Relates to a machine for holding sacks open, passing them on to be filled with grain, passing them to a sewing-machine to have the mouths sewn up, and then discharging the filled and closed sacks from the machine. The machine consists of a framework in which a central shaft B is secured, and of a revolving carrier mounted freely on the said shaft. The carrier consists of an upper frame and a lower table mounted on collars on the shaft B and secured together by adjustable standards so that the distance between them can be regulated according to the size of the sacks to be filled. The said upper frame carries four sack-holders, each consisting of a fixed segmental jaw F^1 and two hinged segmental jaws F^2 and F^3. The jaws F^2 and F^3 have fixed spikes or teeth F^4, while the jaws F^1 are provided with retractable teeth which can be withdrawn by hand-operated mechanism. The jaws F^2 and F^3 are pivoted to operating-rods G fitted with springs which tend to keep the said jaws closed, as shown at the right and left of Fig. 1. The rods G have chains attached to them leading to treadles mounted on the revolving carrier so that the jaws can be opened at will. In addition to this, the jaws are opened automatically during a portion of their travel by means of a fixed cam G^{10} engaging rollers G^9 on the bars G. The revolving carrier is driven intermittently from the main shaft D by the following mechanism:—A ring of teeth is provided on the said carrier, and a tooth on one arm of a bell-crank lever mounted in a sliding block E^2 engages with the said ring of teeth. The other arm of the bell-crank lever is connected by a rod E^1 with an eccentric E on the shaft D^4 driven by bevel gearing from the shaft D. The bell-crank lever is mounted in the block E^2 in such a way that the action of the eccentric tends to operate the tooth and also reciprocate the said block. When in the position shown at the bottom of Fig. 1, the jaws F^2 and F^3 are opened by the treadle above referred to, and the sack is placed on the hooks F^4. The treadle is then released, and the jaws F^2, F^5 are closed, forcing the sack over the points F^5. The revolving carrier then moves forward, and the cam G^{10} opens the jaws F^2, F^3 again as shown at the top of Fig. 1, in which position the sack is filled. The revolving carrier then carries the sack forward, the cam G^{10} ceases to act, the jaws F^2 and F^3 are again closed, and the mouth of the sack is carried through a sewing-apparatus K. The sack is then returned to the original position at the bottom of Fig. 1, when the teeth F^5 are first withdrawn and then the treadle is depressed

FIG. I.



to open the jaws and at the same time a board O is tilted and throws the filled sack out of the machine. The sewing-apparatus K comprises a fixed disc having an annular race for a semicircular needle and a cam-groove for controlling the action of the needle-drivers. The said disc is also formed with a recess which extends across the needle race and through which the mouth of the sack is moved by the revolving carrier. The needle is driven by means of two drivers which engage holes in the needle and which are withdrawn temporarily from the needle as each driver crosses the said recess by the action of the cam-groove in the fixed disc. A rotary disc on the end of the main driving-shaft D is formed with radial grooves in which the needle-drivers lie, so that they are carried round to drive the needle. The needle is formed with a cavity in which a coil of thread wound in a special manner and a tension device is placed. An arrangement is described by means of which the first stitch is locked. The needle then continues to sew overedge stitching.

15,264. Schwartner, E. June 26.



Embroidery.—A groundwork of lace or braid is embroidered with any suitable pattern on one or both sides in an embroidery machine. The stitches may be formed into cords *b*, *c*, *d*, waves of chain stitch *e*, or 'moss stitch' *f*, any suitable pattern being formed, and any material, such as gold or silver thread or worsted, being used.

15,336. Cutlan, F., and **Cutlan Lasting Machinery Co.** June 26.

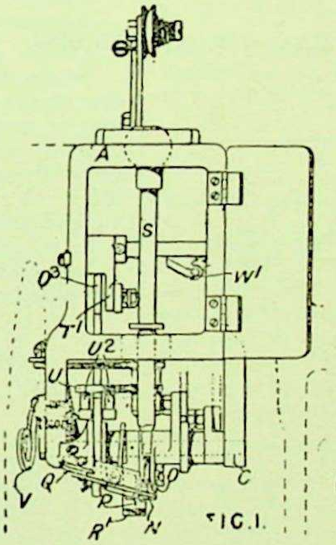


FIG. 1.

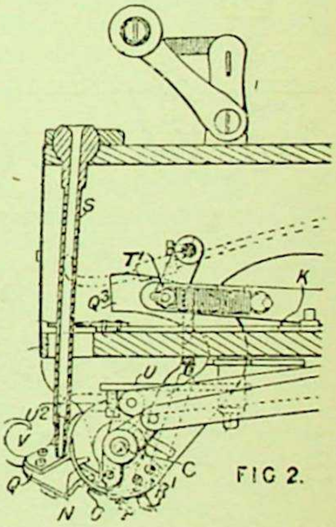


FIG 2.

Boot-sole stitching-machines; frames.—The general arrangement is shown in plan in Fig. 3. The machine has an enclosed frame A to which access is obtained through suitable doors. There are two main spindles B and C, the latter being fixed, and the former rotatable and carrying the cams which actuate the various parts. The cam H operates the welt-carrier and feed; G a welt-carrier lock; E the cast-off; and D the needle. The cam F is a double one, and causes the end of the looper S, which is attached to the frame by a ball-and-socket joint, to describe a closed curve round the needle. The connection between the cams and the parts which they actuate is directly effected through rods, only one of which, viz., the rod K mentioned below is pivoted on the framing. The cam rods have forks which embrace the shaft B, and friction rollers which engage with the cams.

Chain-stitching; needle-driving; needles, hook, cast-off devices for.—The motions here as in all other parts are intermittent where necessary; for example, the needle makes a pause while the feed is in progress. The needle N passes through the cast-off O, and both are mounted on carriers which oscillate on the fixed spindle C.

Needles, hook, threading-devices for; wax-thread machines.—The looper S, which is supported as above stated, is preferably tubular, and is given its motion by cam-rods K and K^2. The former moves it sideways, while the latter moves it to and fro, and it is thus caused to move round the point of the needle to which it applies the thread. The tubular form of the looper facilitates the application of heat by a burner W^1.

Feed; work-supports.—The rear part of the foot against which the work is pressed is shown at R^1, but the part which co-operates with the welt-carrier Q in clamping the work is the front part and is not shown. The foot is fixed on the spindle C, and does not move. The welt carrier Q can move both to and fro and sideways, and is pressed by a spring against the foot above-mentioned. It is locked during the operation of making a stitch so that the work is firmly fixed by an arm T^1

actuated by the cam G. The arm T^1 acts for this purpose upon a flange Q^3 projecting from the welt guide and lying between rollers U^2 on a lever U, which communicates the required lateral

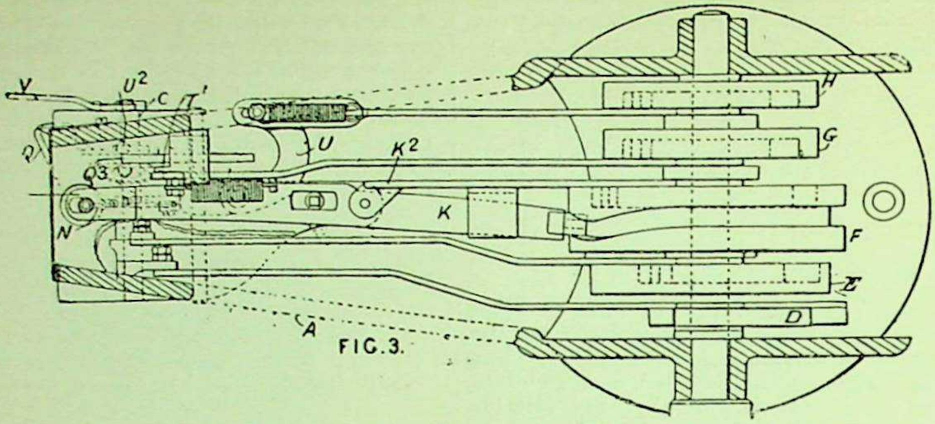


FIG. 3.

motion. This motion is also communicated to a foot P, which co-operates with the welt-guide in effecting the feet, and is hinged on its support so as to enable it to adapt itself to irregularities in the work. V is a hooked additional guide for the welt.

15,477. Jordan, J. J., and Kelly, J. A. June 29.

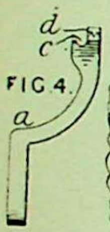


FIG. 4.

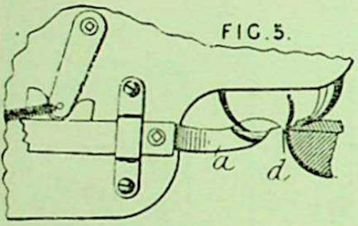


FIG. 5.

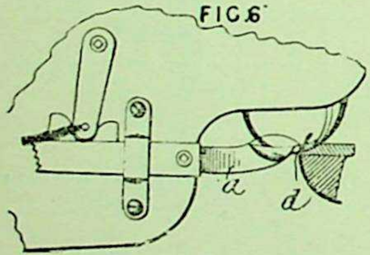


FIG. 6

Boot-sole stitching-machines.—Consists of means for lasting and sewing the sole and upper together at one operation. The edge of the upper is folded over the sole as the needle is about to make a stitch, by a moving arm *a* shown in underneath view in Fig. 4. The arm has teeth *d* to engage the upper, and a groove *c* to allow the needle to pass. Fig. 5 shows the arm moving forward as the needle is about to enter the work, and Fig. 6 shows the folding operation complete with the needle in the work.

15,520. Caesar, E. June 29.

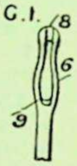


FIG. 1.

Sewing-needles. — The eye of the needle, which may or may not be bulged out, as shown at 6, is grooved as shown at 8. The thread becomes wedged into the grooves, and is prevented from being drawn out. The eye may be similarly shaped at 9.

15,711. Adams, A. July 1.

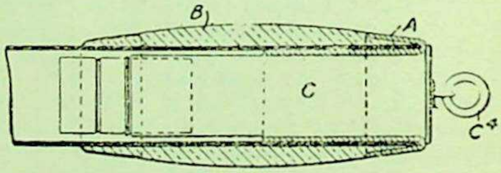


FIG. 2

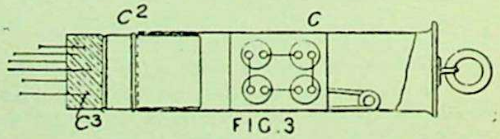


FIG. 3

Pin and like boxes and cases.—Relates to a receptacle placed within a cycle handle for containing pins, string, wire, buttons, sewing or stitching material, or other small articles. A ferrule A on the outer end of the handle B has a split socket body, into which is fitted the requisite case or receptacle C which closes the end of the handle-bar. This receptacle C consists of a tube closed at one end by a cap provided with a ring C^4, and at the other end by a stopper C^2 fitted with a cork C^3 or such material to serve as a pin cushion. The Provisional Specification states that a locking or securing device may be applied to the receptacle.

15,994. Tripp, J. July 6.

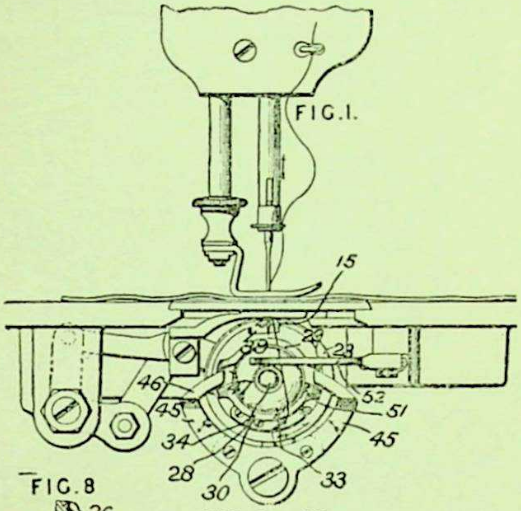


FIG.8

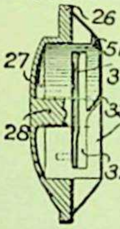


FIG.9.

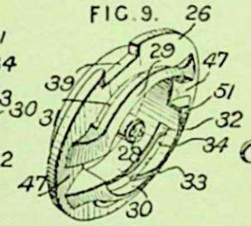


FIG.10.

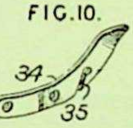


FIG.6.

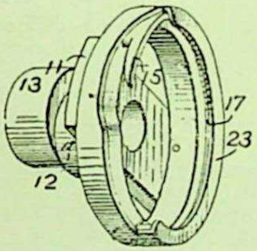
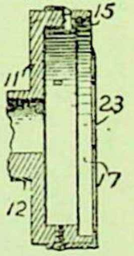


FIG.7.



Lock-stitch hook sewing-machines.—A hook-supporting head 11 is carried on the end of the under shaft, and is preferably made in one with eccentrics 12 and 13, the former of which operates the feed, and the latter a pair of arms by which the rotation of the bobbin case is prevented. The head carries the hook 15 and is cut away at 17, the recess being covered by a plate 23, a groove being thus formed which receives a flange 26 on the bobbin case. The head is also cut away in advance of the hook to enable the loop to clear it when drawn tight by the take-up. In order to expand the loop the bobbin case is dished at the back 27 and provided in front with suitably-bevelled flanges 29, 30, the former of which is cut away at 31 to receive the point of the needle. The flange 30 is also cut away at 32 to receive the under thread which is passed into it through a slot 33 and behind an adjustable tension spring 34, shown separately in Fig. 10. The thread is finally drawn out through a notch 35 in the spring, whence it passes to the throat plate. The flange 26 of the bobbin case is recessed at 39 to afford room for the loop and also to prevent it from being twisted as it is drawn tight. The eccentric 13 operates a pair of oscillating arms 45 having pallets 46 which enter alternately the spaces 47 between the flanges or lugs 29 and 30 and thus keep the bobbin case at rest while allowing the loop to pass. The bobbin is supported by a pin 28 projecting from the bobbin case, and is held in place by a spring catch 52. The bobbin case is cut away at 51 to allow the thumb nail to be introduced when it is required to remove the bobbin.

16,026. Goertler, J. July 6. *Drawings to Specification.*

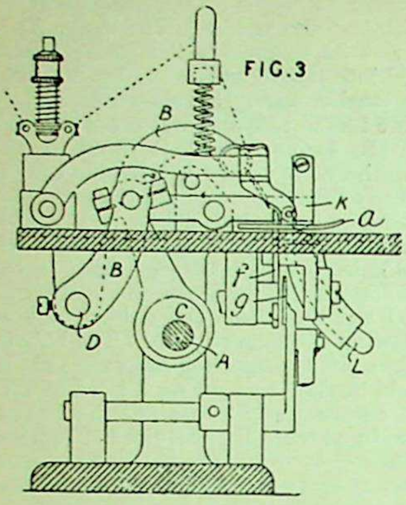
Embroidery.—In embroidering gloves and other leather goods, wire is used as the upper thread or as both the upper and lower threads.

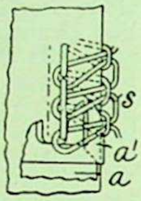
16,993. Köhler, J. July 19.

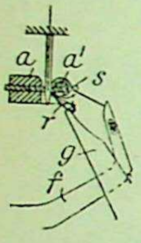
Overedge-stitching machines ; knitted-fabric sewing-machines.—The seam shown in Fig. 15 is made by a needle and two loopers *f*, *g*, the former of which carries a thread. The looper *g* catches the needle thread *r* as shown in Fig. 11, and forms a loop through which the looper *f* passes. The needle then catches a loop in the thread *s* in its descent, while the looper *f* casts off the loop *r* as shown in Fig. 14. The loop *s* is then cast off by the needle, another loop having been formed on the needle thread by the looper *g*. The presser-foot is shown at *a*, a^1, Figs. 11 to 15, and the thread *s* is laid over the branch a^1, which can be adjusted nearer to or further from the fixed part so as to ensure that the edge of the fabric is covered by the stitching. The needle is carried by an arm B, which is oscillated on a shaft D by an eccentric C on the main shaft A. The shaft D can be slid in its bearings so as to enable the distance of the needle from the edge of the fabric to be varied. The edge is trimmed by shears, the upper and movable blade of which is shown at K. This blade may be adjusted with respect to, and is pressed by a spring against, the lower and fixed one L. In order to prevent defective feed due to the action of the shears in pulling back the fabric, two feed-bars are used, one near the needle, and another giving a slightly greater feed near the shears. The motion of the loopers is derived from the main shaft by worm gearing. The needle arm is slightly adjustable laterally, to enable seams of different widths to be made.

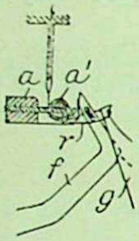
(*For Figures see next page.*)

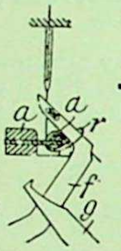
16,993.

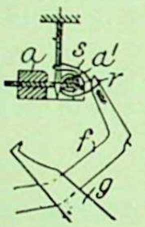




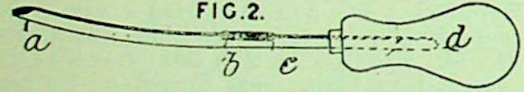








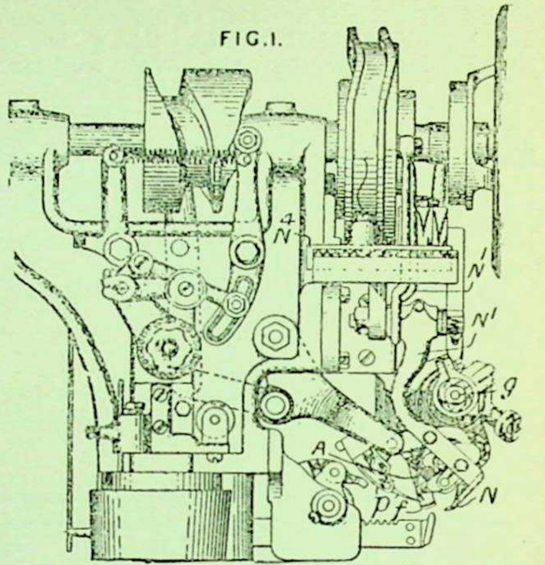
17,272. **Bradbury, J.** July 22.

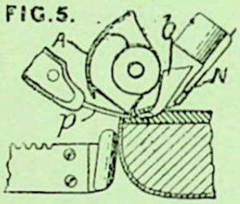


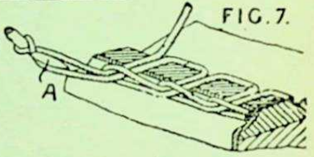
Awls for sewing; sewing-needles.—A tool for use in packing hampers &c. consists of a handle *d* carrying a tube with a bevelled end *a* and an opening at *b*, *c* for the insertion of the packing-twine &c. The tube may be slightly open throughout.

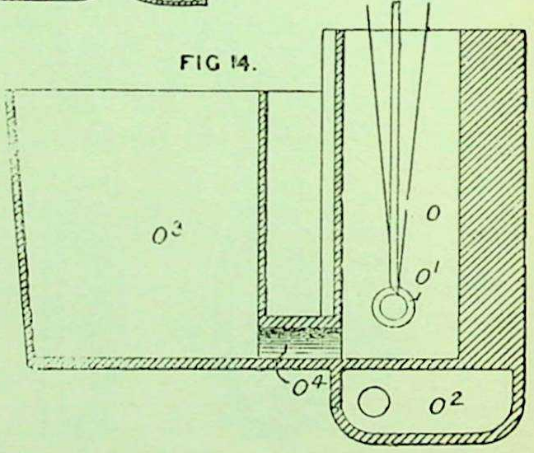
17,404. **Lake, H. H.,** [*International Eppler Welt Machinery Co.*]. July 23.

Boot-sole stitching-machines.—The main object is to provide a machine in which the work can be readily turned through small angles without straining the thread. This is effected by causing the awl to penetrate the work at one side of the welt guide, and, after effecting the feed, to leave it at the other side. The needle A and awl *p* penetrate the work from the same side, the radius of movement of the awl being greater than that of the needle, so as to clear it while making the stitch. The awl support and the back gauge or presser *f* are carried on the same axles *g*, and are moved laterally in one direction by a spring and in the other by a cam-actuated lever. The welt guide *b* is fixed to the frame, the disposition of the awl, needle, welt guide, and looper N being shown in Fig. 5. In operation the awl pierces the work in the side of the welt guide opposite to the stitch last made. It then, together with the presser, moves across the welt guide, the needle being retracted. The awl then withdraws, leaving the presser against the work, and the needle makes the stitch, during which operation the presser withdraws and moves laterally with the awl back to their first position. The looper N is carried on a lever N¹ which is pivoted on a laterally-moving slide N⁴. Movement is given to both lever and









slide by cams, so that the thread is given about one turn and a-half round the needle, as shown in Fig. 7. The wax pot is shown in Fig. 14 An eye O^1 for the thread dips into a chamber O in which the wax is heated by steam in the chamber O^2. The chamber O communicates with a wax reservoir O^3 by a narrow passage O^4, but is otherwise separated by an air space. The object is to prevent the bulk of the wax in the chamber O^3 from getting hot, while a sufficient supply is secured through the passage O^4.

17,875. Beaty, R., Beaty, W., and **Beaty, D.,** [*trading as* Beaty Bros.]. July 30.

FIG. 4.

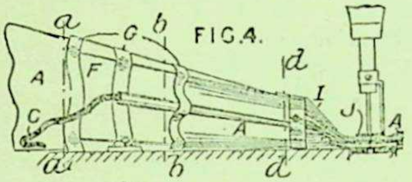


FIG. 6.

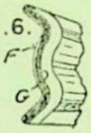


FIG. 7.

FIG. 8.

FIG. 1.

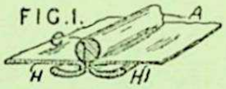
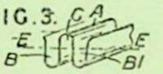


FIG. 3.



Sewing-machine folding-attachments and presser-feet.—The seams of rainproof garments, clothing for animals, leggings, gaiters, covers for vehicles, umbrellas, and other articles are rendered waterproof by joining the edges of the material of the article by means of a strap A of rainproof material folded into the form shown in Fig. 3, the edges of the material being respectively placed in the channels B, B^1 while a cord is placed in the channel C and the whole, after passing through a special folding attachment to a sewing-machine, is sewn together along the line E, E and is subsequently ironed and flattened to the shape shown in Fig. 1, in which H, H^1 are the edges of the material and C the cord, which latter, however, may be dispensed with. Fig. 4 shows a side view of the folding-attachment for the sewing-machine, and Figs. 6, 7, and 8 are vertical sections on the lines *a a*, *b b*, and *d d*, Fig. 4, respectively. It consists of a bent tapered plate F between which and the metal pieces G the strap A, Fig. 3, is passed and folded while the material H, H^1 passes along the exterior of the plate F, and at its termination they and the cord C meet and are held together by the spring plate I until they pass beneath the presser-plate J and are sewn together along the line E E, Fig. 3. To accommodate the varying thickness of the material, the presser-plate J is mounted on the needle and is grooved to allow of the passage of the cord C.

18,611. Darbyshire, F. Aug. 11.

FIG. 4

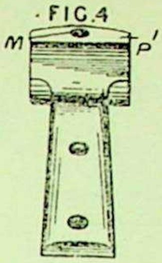
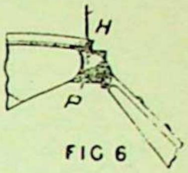


FIG. 6



Boot-sole stitching-machines; work-supports.—Relates to end plates for work-supporting horns for use when attaching soles to welts. The welt having been secured in the usual way upon a horn fitting inside the boot, the sole is attached to the welt in the same or another machine furnished with the end plate which is the subject of the present invention, and which is applied outside the boot in the manner shown in Fig. 6. This plate is hollowed out at P to accommodate the upper, and has a hole M for the needle H. Its upper working edge P^1 is convex, as shown in Fig. 4.

18,985. Knippenberg, A. Aug. 17.

FIG. 1.

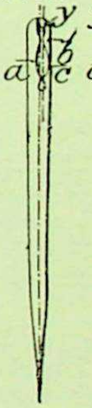


FIG. 7.

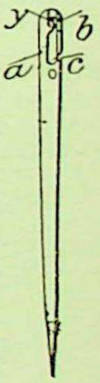


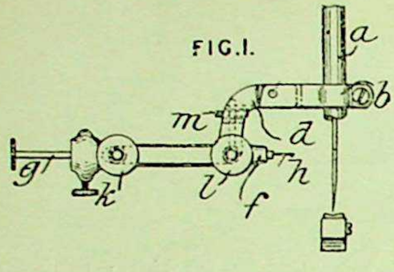
FIG. 10

Sewing-needles.—The eye is shaped as shown and is situated slightly at one side of the needle so as to leave the wall *a* thicker than the wall *b*. The thread can be forced through an opening *c* in the thinner wall *b*, which springs so as to allow it to pass. The thread is finally forced into a recess *y* at the end of the eye where it is retained. The recess *y* may be situated to one side or the other of the needle, as shown in Fig. 7. The head is slightly flattened as shown in Fig. 10, to prevent it from sticking in the work.

19,310. Kappler, W. Aug. 20.

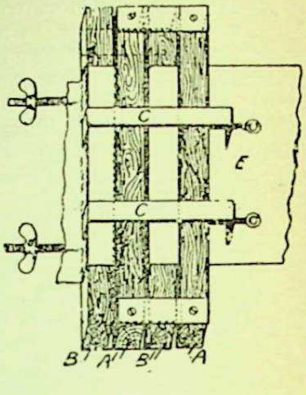
Needle-threaders. — Relates to needle-threaders attached to sewing-machines. Upon the presser-bar *a*, or other part of the machine, is clamped a support *b*, on which is hinged an arm *d*. The arm carries by means of adjusting-screws *k*, *l*, *m* a barrel *f* containing a spring which acts on a rod *g* with a hooked end *h* which can be passed through the eye of the needle by pressing on a button in the opposite end. The thread is engaged with the hook and drawn through the eye of the needle by the action of the spring when the button is released.

FIG.I.



19,369. Kauffmann, J. Aug. 21.

Embroidery.—The sides of frames for embroidery machines are composed of two separate sets, each of two or more bars A, A¹ and B, B¹. The fabric E is placed over the bars of the one set and pressed down between them by the bars of the other one, in the manner shown. In this position, it is secured by clamps C. This arrangement enables long pieces of work to be embroidered bit by bit.



19,535. Bastie, A., and **Bastie, J. B.** Aug. 24.

Embroidery. — Reference is made to Specification No. 6053, A.D. 1893. The sewing-needles are arranged in two rows, a section of one of which is shown in Figs. 7 and 8. They are mounted in carriers 64 which are operated by a shaft 60, arms 61, links 62, and bars 63. 77 is a take-up rod mounted on arms 69 which are oscillated by a shaft 68. The arms 69 also carry a bar 73 which supports thread-locking and tension devices, the latter being shown at 75. The former consist of rods 72, acted on by springs, and provided with heads which engage the threads. The threads are periodically released by a blade 71 on an oscillating rod 70 carried by the arms 69. The presser-feet 65 are acted on by springs and released when the needles leave the work. The shuttles are worked by arms 81 and 82 carried on bars 79, 80 which can be shifted laterally when it is desired to change the shuttles. 83 is a rod carrying looping-hooks, and 85 another rod actuated by hand and carrying cutting-blades. A special device is described for holding new shuttles in place preparatory to exchanging them for the old ones. Fig. 13 shows a modification of a dividing-device for moving the embroidery frame, similar in principle to that described in the former Specification. As in the former case, the device is in duplicate, one half being shown. The frame is hung on chains connected to a rod 20, and is suitably counterweighted, and similar mechanism is used for giving it its lateral and vertical movements. On the rod 20 are a number of steps *g* engaged by a dog which is suitably operated by a bar 126 connected with the jacquard mechanism. The dog is mounted on a carriage 23 sliding on another carriage 22 which

FIG.7.

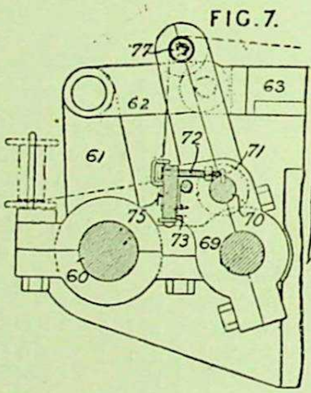


FIG.8.

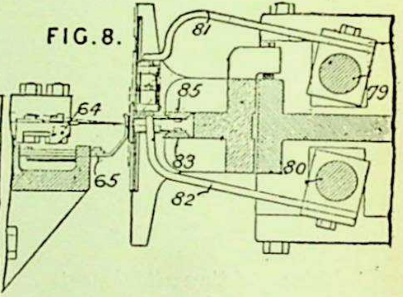
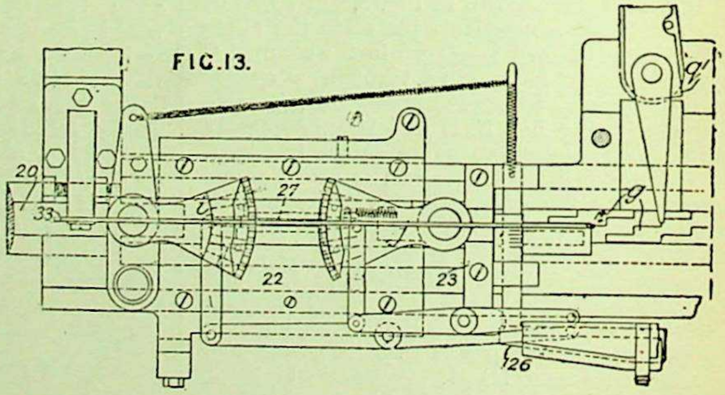
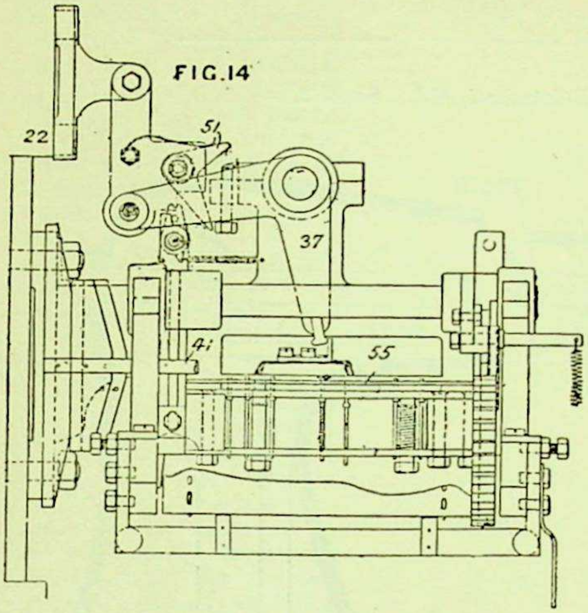


FIG.13.



is moved to and fro by the main shaft of the machine. A sector *i* in the steps underneath is mounted on the carriage 22, and a similar sector *j* on the carriage 23. Between the steps on the sectors is placed a rod or block 27. These sectors are also moved by the jacquard mechanism. When the sectors and the dog have been suitably moved the carriages 22 are made to approach, and, the distance between them always remaining the same, as in the former Specification, the rod 20 will be moved. As before, the sectors *i* and *j* subdivide the main division *g*. The sectors and dog are fixed when in position by a locking-bar 33, and when the rod 20 has been moved, it is locked by a clamp q^1. The jacquard mechanism is shown in Fig. 14. It is operated from one of the slides 22 which actuates a lever 37. As the slide moves down it depresses the frame carrying the needles by a trip pawl 57, and at the same time moves the rods 41 to the right against the action of springs. These rods carry the bars which set the sectors and dogs. This action being completed, the pawl 51 is tripped and the needles rise, those selected by the card coming in the way of projections on the rods 41, as these rods move to the left under the action of their springs. Suitable stop-devices are provided for ensuring the correct position of the card as it moves under the plate 55.

FIG. 14



19,546. **Morse, A. J.** Aug. 24.

Sewing-needles.—Machines for swaging needles &c. are provided with a pair of dies *b* and die blocks b^1 which can reciprocate in a cross-groove in the head B^1 carried by the rotating shaft B. The head B^1 is surrounded by a stationary shell or case A fitted with a series of tappets or cams *a* against which impinge the ends of the die blocks or rollers *c* attached thereto. The tappets or cams *a* are held in place by stationary rings secured to the front of the casing A, and are adjusted in position by a ring C with inclined recesses a^1, and by a ring G having curved slots engaging pins *f* on the tappets *a*.

FIG. 6.

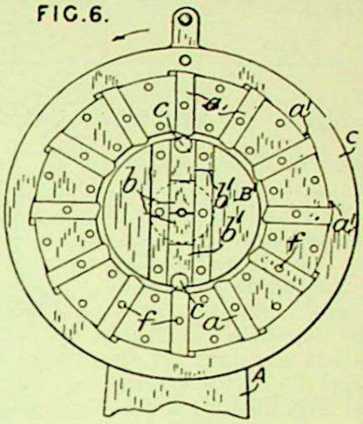
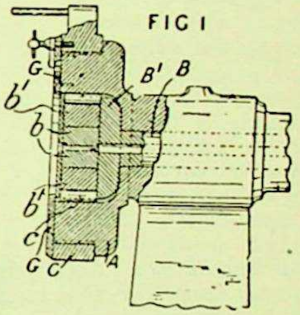
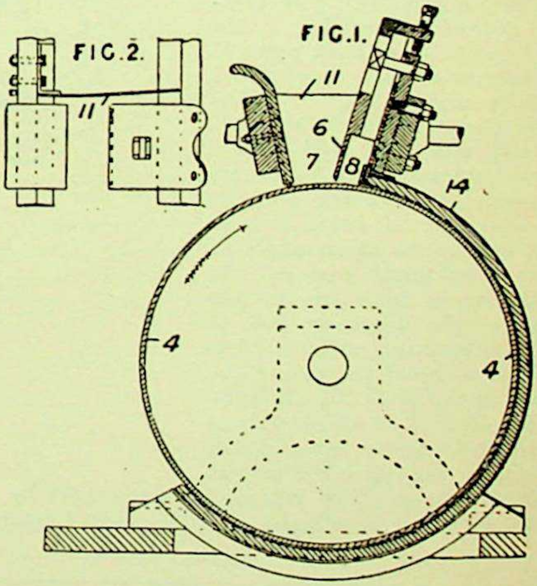


FIG. 1



19,820. **Bartleet, E. R. S.** Aug. 28.

FIG. 2. FIG. 1.



Sewing-needles.—Relates to hoppers for feeding needles or similar objects to the grindstone which points them. The hopper is divided into compartments 7 and 8 by an adjustable knife 6. The wires are placed in the compartment 7, and by the action of the pulley or roller 4 are laid parallel to one another and pass underneath the knife-edge into the compartment 8. Thence they pass round between the pulley, which is rubber-coated, and the band 14, which is lined with leather, to the grindstone. In order to get the points level, a guide-plate 11 is employed, part of which opposite the compartment 8 is directed slightly outwards as shown in Fig. 2, so as to avoid disturbing the alignment of the ends after passing the knife.

20,231. Lake, H. H., [*Petrini, C.*, *Petrini, R.* and *Catenacci, E.*]. Sept. 2.

FIG. 2.

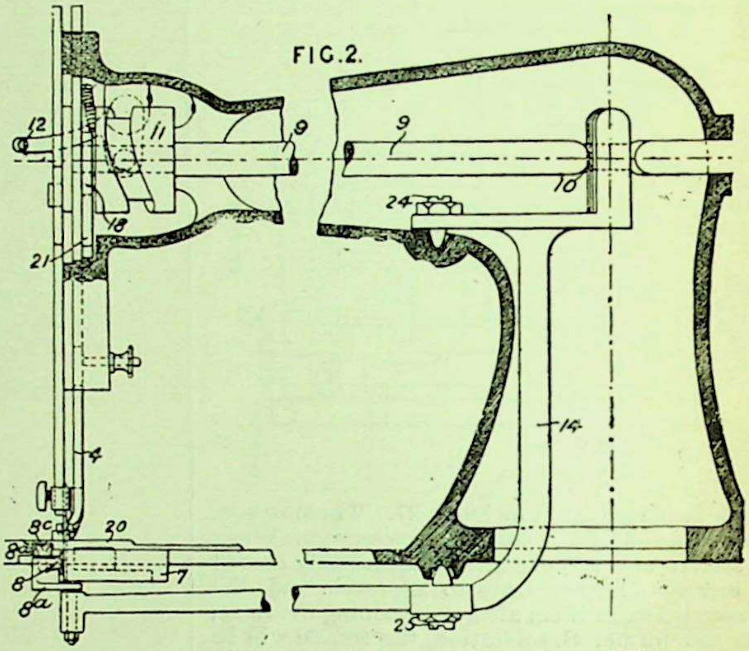


FIG. 14.

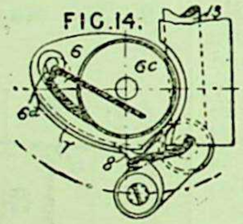


FIG. 15.

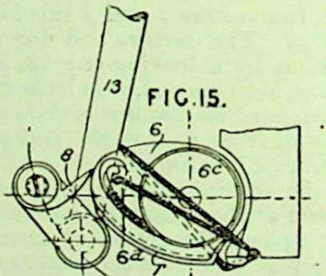
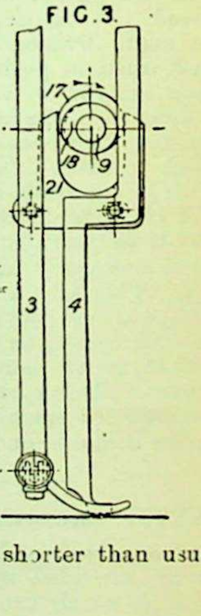


FIG. 3.



Lock-stitch shuttle sewing-machines. — In this machine the shuttle is fixed, and the upper thread is passed round it by a loop taker. The lever 13, 14, pivoted to the frame at 24 and 25, is vibrated laterally by a crank 10 in the main shaft 9. On the end of the arm 13 is pivoted a link 8^a which carries a loop taker 8 guided by a pin 8^c sliding in a groove 8^d in the work-plate 20, so that it moves to and fro along the edge *r* of the shuttle 6. Its action in seizing a loop of the needle thread and laying it round the shuttle is shown in Figs. 14 and 15. The shuttle carrier 7 is carried by a slide in the cloth plate, and the shuttle has a hollow which receives the under-thread bobbin 6^c. The shuttle has no cover for the bobbin, and there are no special threading-holes. The under-thread tension is regulated by an adjustable spring shown in dotted lines at 6^d. The feed-bar 4 and presser-bar 3 are pivoted to a U-shaped plate 21 which embraces an eccentric 17 on the main shaft 9. This causes them to be lifted alternately, and the feed-bar is moved sideways at the proper moment to effect the feed by an eccentric 18 which follows the former one at an angle of 90°. The upper end of the feed-bar is kept up to the eccentric by a spring, and, to allow adjustment of feed, it has a slotted hole to receive the pivot on the plate 21. Adjustment of feed is effected by a stop which can be moved so as to engage with its lower arm at different places. The take-up 12 is operated by the cam 11. The needle is made shorter than usual, and is threaded from right to left instead of from left to right.

20,253. Scott, R. Sept. 3.

Embroidery. — Relates to jacquard mechanism for embroidery machines. The frame *a* has a pair of rails a^1 supported by rollers b^1 which are mounted on levers *b*, pivoted at b^2 and attached to a counterweight c. This weight is raised or lowered by a rod A carrying at its end a diagonal bar d^1 which changes the horizontal movements of the rod into vertical ones of the weight. A second rod B gives the frame horizontal movement through reducing-gearing consisting of pinions e, f, the latter of which is splined on the spindle of the former so as to allow the frame to move vertically and still remain in gear. The rods A, B are similarly actuated by a jacquard. The bar B, for example, has a rack B^1 on each side of it, and corresponding to each rack is a hinged toothed rod C which actuates the bar when moved so that the teeth engage. The rods C move the bar in opposite directions. In order to move a rod C so as to engage the bar, it is acted upon by an arm k^2 mounted on a lever k which is raised by the jacquard in the ordinary way, and when so raised the arm can be pressed against the rod by a projection g^5 on a cam g^1. Two cams g^1, g^2 are provided for each pair of rods C, and move them longitudinally by means of links j. The links pass between knife edges C^1 on the rods and are vibrated by slides h, the extent of their swing being determined by the position of their pivots j^1, which are mounted on the rods k.

FIG. 1.

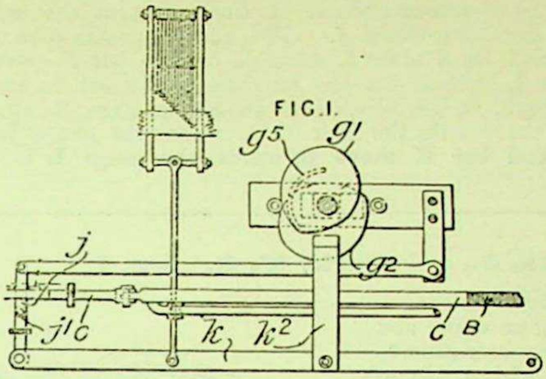


FIG. 2

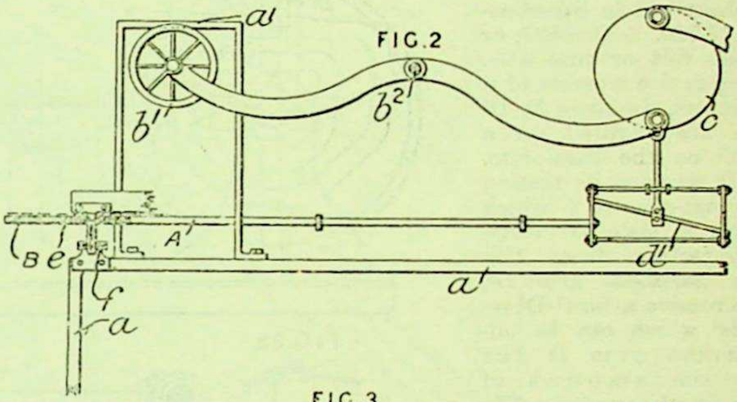
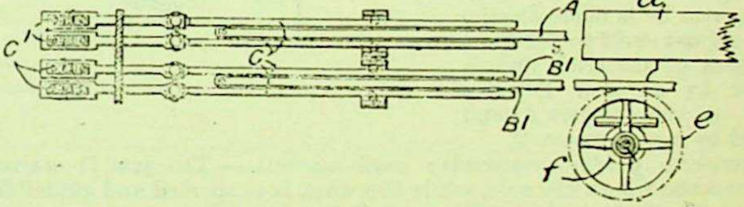


FIG. 3.



20,544. Lake, W. R., [*Bertrand, J. E.*].
Sept. 7.

FIG. 8.

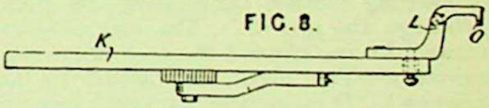


FIG. 5. FIG. 4.

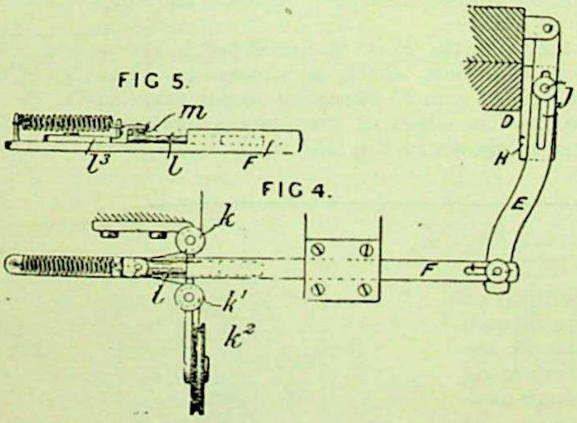


FIG. 3.

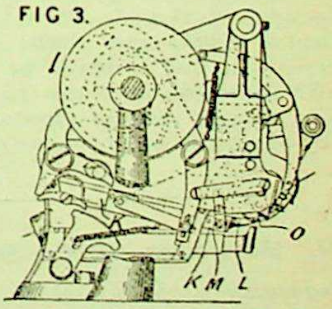


FIG. 12

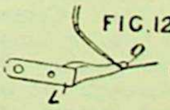
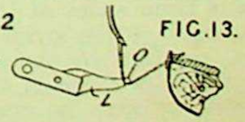


FIG. 13.



Boot-sole stitching-machines. — Relates to the needle-thread governing mechanism of chain-stitch wax-thread machines. As shown in Fig. 4, the thread pull-off bar F is actuated by a lever E which is rocked by the feed-slide D, H, the extent of the movement being adjusted by altering the position of the clamping-screw *j*. The thread passes over sheaves *k*, k^1, k^2, and *m*, Fig. 5. The sheave *m* is carried by a slide *l*, movable on the bar F under the control of a spring and stop l^3. The back gauge L, which sets the stitches, is pivoted to the slide-bar K, Fig. 3, and to a link M adjustable in length, and is shaped as shown in Figs. 8, 12, and 13. When the bar K is moved backwards with the needle the link M depresses the gauge L, as shown in Fig. 13, to set the stitch. As the needle and bar K move forwards, the gauge L is raised so that the needle passes under the finger *o*.

20,555. **Keats, J.**, and **Clark, W. S.** Sept. 7.

FIG.1.

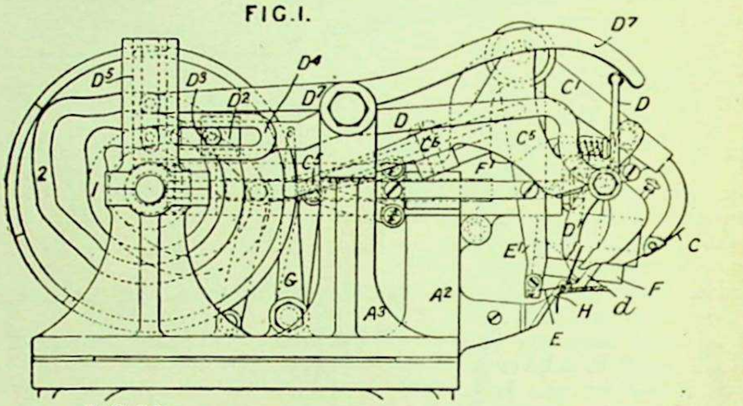


FIG.23.

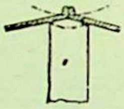
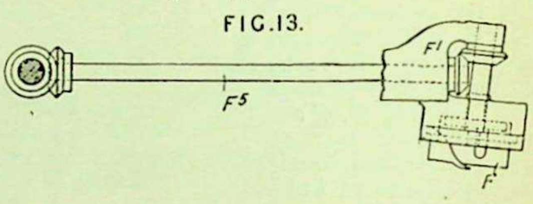


FIG.13.



Boot-sole stitching-machines.—Consists in lasting an upper and stitching it at one operation to a sole prepared with a rib in the way described in Specification No. 16,720, A.D. 1897, or to a ribbed felt or jute sole. The lasting-device consists of a pair of pincers, the arms D, D^1 of which are pivoted on a support A^3 on the base-plate. The arm D receives its motion from a cam-groove 1 which reciprocates a slide D^5 vertically. Projecting from this arm is a horizonal arm D^4, slotted to receive a bowl D^3 on a block D^2 which can be adjusted on the arm D for regulating the amount of stretching of the upper. The gripping-arm D^1 is made elastic, so as to adjust itself to different thicknesses of material, and is actuated by an arm D^7 also pivoted on the support A^3 and actuated by a cam-groove 2.

Presser-feet; guiding materials; work-supports.—The jaw D carries a spring presser-foot *d* which fits behind the rib on the sole, while the work is supported and guided by a fixed arm H.

Perforating-devices; feed.—The awl C is carried by an arm arranged so as to be capable of sliding in the direction of the seam, in order to produce the feed, in a rocker C^1 which is pivoted on a standard A^2, and receives its motion from a cam through links. C^5 is a lever, pivoted at C^6, which gives the feeding motion by pressing on pins on the awl carrier which project to an adjustable distance through the arm C^1. The awl penetrates the work as soon as the pincers have stretched the upper, and, having effected the feed, leaves it, and is immediately followed by the needle E.

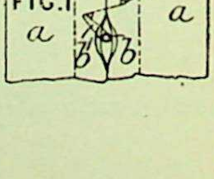
Needle-driving.—The needle is carried by an arm E^1 pivoted on the standard A^2 which also supports the awl. It is actuated by a cam through suitable linkwork, part of which is shown.

Governing needle thread.—The take-up is effected by an arm G.

Lock-stitch shuttles and shuttle mechanism.—A rotary shuttle F is mounted with its axis in an oblique position, and is driven by bevel gearing from the main shaft, as shown in Fig. 13. The spindle F^5, which communicates the motion, passes through an arm F^1 swinging on the main shaft.

Leather, sewing; seaming edge-to-edge; blind-stitching.—The edges of two pieces of leather can be joined by blind-stitches by the use of a suitable support, as shown in Fig. 23.

20,680. **Sargeant, E. F.** Sept. 8.



Belting-sewing machines.—Relates to the manufacture of driving-belts from strips of leather. Central slits are formed along the edges of the strips *a* to be united, and these are then sewn together by thread passing through a vibrating arm *b*, b^1 and pegs *c* driven through the belt. Through-and-through stitches may be used instead of the pegs *a*. In some cases the strips may be sewn together as follows:—A hooked needle is driven through one strip at an angle, so that it emerges at the lower edge, and this picks up and draws through a bottom thread, through the loop of which a top thread is passed; both loops are then drawn back into the substance of the leather, the bottom thread is drawn up through the adjoining strip in the same way, the top thread passed through its loop, and so on, the top thread thus assuming a zig-zag course on top of the belt.

FIG. 3.

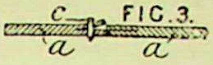
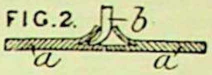


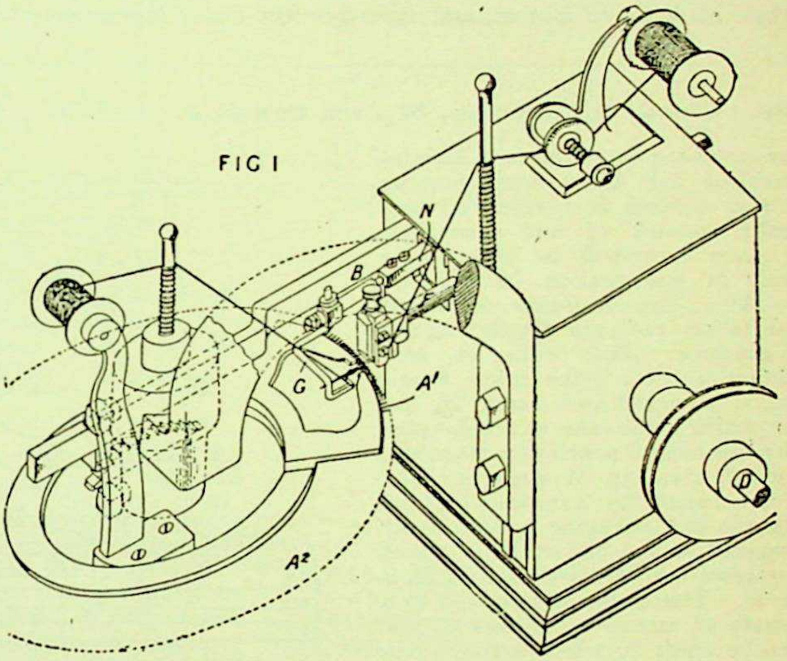
FIG. 2.



20,716. Köhler, F. J. Sept. 9.

Double-loop stitching-machines.—The machine is used for linking, and the work is carried by a circular frame A^2 provided with pins A^1 for its reception. The general arrangement is shown. F is the needle bar, provided with a fork which embraces an eccentric on the main shaft D. The looper G is adjustably carried on its bar N, which is pivoted to a lever operated by a cam. The feed is effected by rotating the work-supporting frame by a pawl device operated by a cam-actuated arm B The pawl actuates a ratchet-wheel which rotates the frame by intermediate mechanism not shown. A machine with a straight work-support is also described.

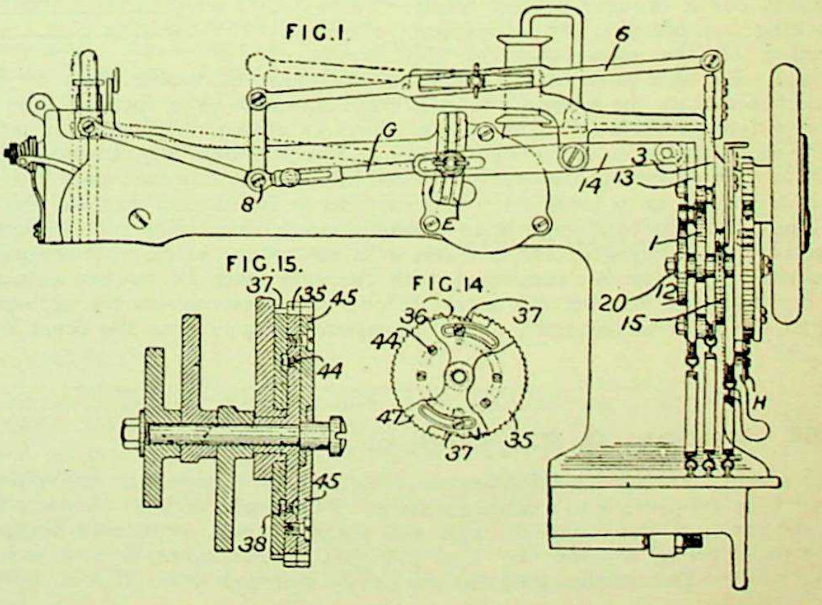
FIG 1



21,087. Parkes, W. N. Sept. 14.

Sewing-machine needle-bars, vibrating laterally; feed.—The improvements are applied to a laterally-vibrating needle machine, to form automatically buttonholes &c. and a variety of stitch designs. The needle-bar is vibrated laterally from the slide E through a toggle connection G. The shaft 20 carries three cams. One of these 1, through a slide 3, operates a lever 6, the fulcrum of which is adjustable, and the outer end of which is connected to the toggle-joint 8, so as to control the lateral position of the lateral vibration of the needle-bar. The cam 12, through the slide 13 and lever 14, shifts the

FIG. 1. FIG. 15. FIG. 14



position of the inner end of the rod G in the slide E, and so controls the extent of lateral vibration of the needle-bar. The cam 15, by a slide in connection with the feed-lever H, controls the direction and extent of feed of the work. The cam shaft may carry an ordinary ratchet-wheel, driven by a pawl of adjustable throw; but, in order to provide for more complicated movements, it is arranged as shown in Figs. 14 and 15. The ratchet-wheel 35, fast on the shaft, has two gaps 36. A smaller ratchet-wheel 37, without gaps, runs loose beside it. One or two pins 44 in the wheel 35 project into a circular slot 38 in the wheel 37, across which there is a bar, as shown in dotted lines in Fig. 14. Two sectors 45 may be adjusted on the face of the wheel 35. On each is a part 47 with teeth coincident with those on the wheel 35, and a plane portion, part of which is below the teeth on the wheel 37, while part covers these teeth. In operation, the pawl, which covers both wheels, turns the wheel 35 until it reaches a gap 36; it then turns the wheel 37 only, and by as many teeth at a time as the sector 45 leaves uncovered. When the bar in the slot 31 reaches a pin 44, the wheel 35 is set in motion, and again brought under the action of the pawl.

21,239. **Wood, A., Ruxton, W.,** and **Coats, J.** Sept. 16.

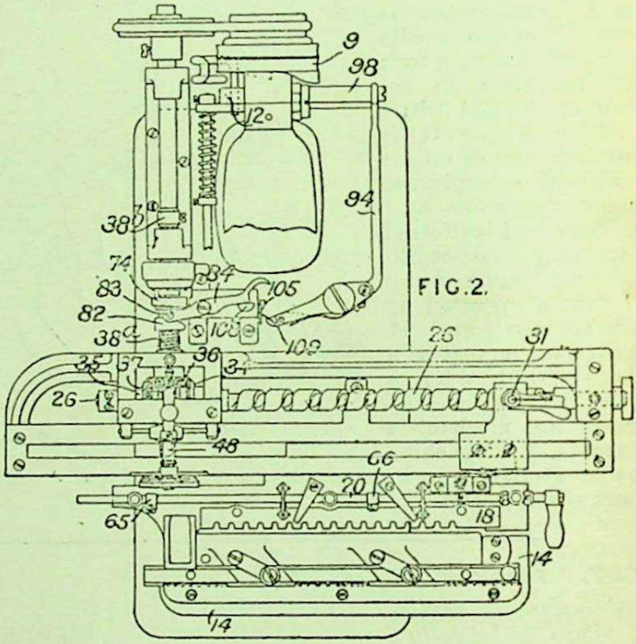


FIG. 2.

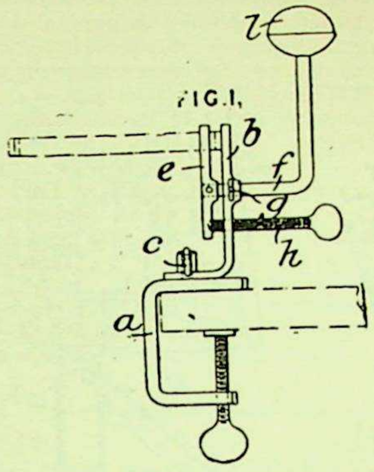
Ornamental-sewing machines.—Relates to machines for doing honeycombing work, and consists in performing mechanically several of the operations which were described as being done manually in Specification No. 24,509, A.D. 1896. The invention is shown applied to an ordinary Singer zig-zag sewing-machine. The frame 14, corresponding to 21 of the prior Specification, is traversed by a screw 26, the pitch of which is the same as the distance between the holes 8 previously described, with which a spring 31 engages. The screw is actuated by a mitre-wheel 36 in a shaft 38^a engaging alternatively with wheels 34 and 35, either of which can be caused to drive the shaft by a clutch 37. The clutch is operated by a rock shaft 48, moved by tappets 65 and 66 on the shaft 20 which actuates the clamp 18. One tappet moves the shaft 48 in one direction and the other in the other, when the movement of the frame 14 brings them into operative position. The shaft 38^a is brought to rest while the sewing is proceeding by mechanism controlled by the stop-motion of the machine. For this purpose the shaft 38^a is connected to the shaft 38^b by a clutch, the portion 74 of which slides in the former, and is pressed upwards by a spring. The part 38^b is driven by a strap from the loose pulley 10. The clutch being in engagement, as soon as the driving-strap is moved from the fast-pulley 9, the sewing ceases in the ordinary way, and the shafts 38^a and 38^b commence to rotate and actuate the screw 26. The clutch 74 is, however, provided with a collar 82 grooved to receive a pin 83 on a lever 84. The groove is so shaped that, as the shafts rotate, they lift the lever and cause it to engage with a spring catch 108. The pin 83 being thus fixed, the clutch is depressed and disengaged, and the screw 26 thus stops after making one revolution. A spring pawl 98 actuated by a rod 94, connected with the stop lever 12, presses in a stud 105 when the tack has been finished and releases the catch 108, thus connecting up the clutch again. The clutch can, if required, be held permanently out of engagement by locking the lever 84 in its raised position by a catch 109.

21,383. **Redfern, G. F.,** [*Krautheimer & Co.*]. Sept. 17.

Embroidery; sewing, work-holders for.—Relates to clamps for embroidery frames. *b* is a standard secured by a set-screw *c* to a table clamp *a*. The frame is held between the standard and the jaw *e*, pivoted on a rod *f* passing through the standard, and adjustable therein by a set-screw *g*. The jaw is acted on by a screw *h*. The rod *f* is turned upwards, and carries a cushion *l* for holding pins or work. The mounting of the jaw can be modified.

(*For Figure see next page.*)

21,383.

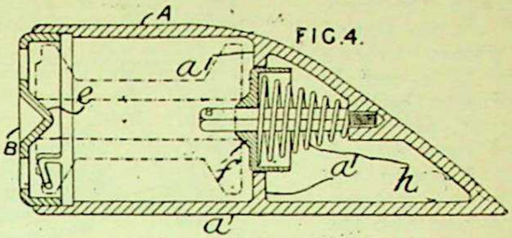


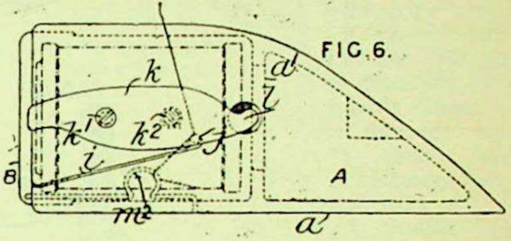
21,810. Knight, A. W. Sept. 23.

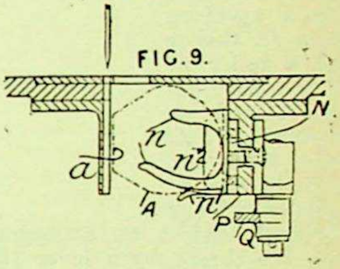
Sewing-needles are grooved on both sides throughout their length. They may be made from wire drawn to the proper section, and the grooves are temporarily filled during grinding.

22,488. Cockle, E. A., Matthews, C., and Hewitt, P. H. Oct. 1.

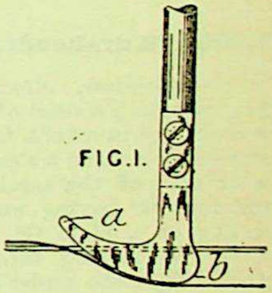
Lock-stitch shuttle sewing-machines.—Relates to means for enabling an ordinary reel to be used in the shuttle. The body of the shuttle A is approximately cylindrical with a flat face a to abut against the shuttle race, as shown in dotted lines in Fig. 9. The reel is mounted between cones e, f, Figs. 4 and 6, the former being part of the cover B which is secured to the body by a bayonet-joint or by screw threads. The cone f slides through an opening in a diaphragm a^1 and is acted on by a spring h which presses it against the reel. The spring is partially enclosed in a casing attached to the cone f, and is thus prevented from becoming entangled with the thread. The thread passes through a wire loop m^2, attached to the body of the shuttle inside, and then through a slit i, and leaves the shuttle by a hole j. It then passes under a tension spring k which carries two thread abutments k^2, l. Fig. 9 shows the shuttle driver N, consisting of horns n which embrace the forward tapered end of the shuttle, a support n^1, and a projection n^2 which engages with its rear end. It is slid on a bar P by a link Q.







22,541. Bowden, W. Oct. 1.



Sewing-machine folding-attachments. — In the machine described in Specification No. 11,257, A.D. 1894, tuck formers are employed the working edges of which lie wholly within the grooves in which they operate, thus obliging them to be raised when new work is introduced. According to the present arrangement, part of the working edge a, b lies above the groove, enabling the attachment to be fixed.

22,799. Farr, H. G. Oct. 5.

Boot-sole stitching-machines. — Relates to improvements on the McKay machine, described in Specification No. 2113, A.D. 1864. The shuttle race is attached to the plate d, and has a cap d^4 to retain the shuttle b^2, which has a point b^3 for entering the needle-thread loop, and is reciprocated by a driver c. The thread is contained in a case b^5 provided with suitable tension devices. Fig. 7 shows the shuttle after completing its forward movement, and just in the act of shedding the needle thread. As the thread case alternately approaches and recedes from the work, sufficient thread is pulled off the bobbin each time for the next stitch. To enable the needle to cast-off the thread, it is caused to rotate at the proper moment and to present its plain side to the loop. The shaft c^1 of the shuttle driver is carried in a long bearing $c^{\times}$, and is driven by a pinion c^2 and a rack c^5 reciprocated by a cam a^2 on the main shaft. To prevent the point b^3 of the shuttle from catching in the shuttle thread after passing through the loop, the shuttle thread is pushed to one side by a rod h^3 sliding on the bearing $c^{\times}$, and actuated by a cam c^3. Fig. 1 shows the general arrangement and also the take-up and the means for actuating the whirl within the horn e. The needle thread passes through a thread clamp f^2 shown separately in Fig. 1^a, thence round rollers f^5, f^6 to a spring take-up f^4, thence round a roller f^9 on the take-up arm f^{10}, and so over rollers f^7, f^8 to the whirl $e^{\times}$. The clamp f^2 consists of a block 12 pressed against an abutment 10 by an adjustable spring f^3. The block 12 is lifted so as to release the thread by a lever 15 which is struck by the arm f^{10}. A shaft f^{16}, which is rotated and reciprocated longitudinally by separate cams, is used to convey motion both to the whirl and to the arm f^{10}. This arm is connected to the shaft f^{10} by a link f^{13} attached swivel-wise to its upper end, while the train of shafting driving the whirl is actuated by a bevel gear g^8 splined on it. It receives rotary reciprocating movement from a rack at its lower end.

FIG.4.

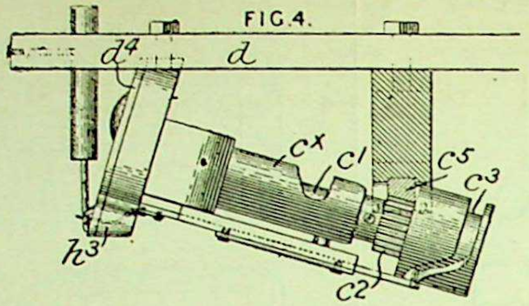


FIG.1

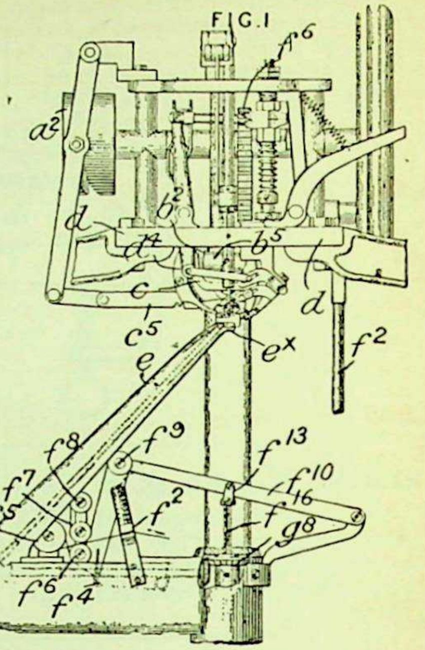


FIG.1a

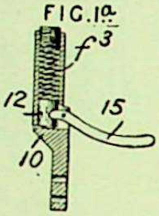
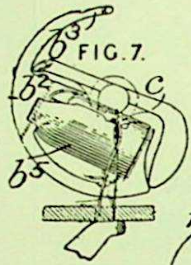


FIG.7.



22,865. **Kursheedt, A. H.** Oct. 5.

Sewing-machines, attaching spangles in.—The spangles, which consist of discs with a central hole, are contained in a tube G^{19} fitting in a hole G^{18} in a stationary arm on a sleeve G^1 which is secured to the framing of the machine. The arm carries a fixed foot G^5 having underneath it a spring G^6 pressing on a plate G^8 which is oscillated by a spindle G^4 passing through the sleeve G^1 and actuated from the under shaft E by a connecting-rod G^{13}. The plate G^8 is thus moved to and fro, so that the lowermost spangle drops into a recess G^{10} in which it is carried forwards under the needle, where it is held by the presser-foot J^{10}. The presser-foot J^{10} is raised and lowered by a lever J^{12} which is operated by a cam on the main shaft.

Feed.—The feed-dog consists of a circular ring J carried by a rod J^1, which is periodically lifted by a lever J^2 and a rod J^3 driven from the under shaft. In order to give the appropriate lateral movements to the feed-dog, the rod J^1 is embraced by one end of a lever B^1 pivoted on a link B^2 which is in turn pivoted on a fixed bar G^2. The other end of the lever B^1 has a hole bevelled at each side, through which passes a sloping pin B^7 on a vertical spindle B^9. This spindle is moved up and down

FIG.1.

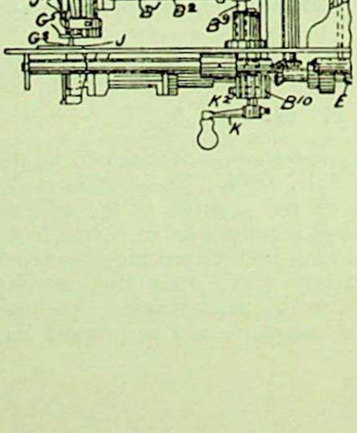


FIG.13.

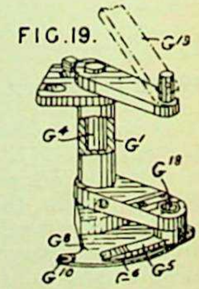
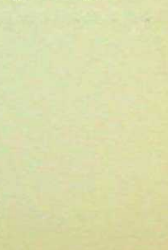


FIG.19.



by an arm on a rock shaft which is oscillated by a cam the effect of which can be modified by a link motion so as to vary the movement of the spindle B^9. As the spindle rises and falls, the sloping pin B^7 moves the lever to and fro or sideways, or in combinations of these directions, according to the position of the pin, and the feed-dog is moved correspondingly so that the work can be fed in any required direction. In order to vary the position of the pin as the sewing proceeds, the spindle B^9 is made capable of rotation. It carries a pinion B^{10} long enough to engage with a second pinion K^2 as it rises and falls with the spindle, and the pinion K^2 is operated by a handle K.

22,935. Eiselt, W. Oct. 6. *Drawings to Specification.*

Lock-stitch shuttle sewing-machines.—Relates to thread cops for use in shuttles. The thread is wound obliquely to the axis so as to form a long cop, which fits in the shuttle, and is held there by its own friction without other support. The thread is withdrawn from the centre so that the cop always retains the same external size.

22,955. Gerlach, A., [*Rehwoldt, F.*]. Oct. 6.

Book-stitching machines.—The open signatures are placed astride a support C, which is mounted on arms c^3 and moved forwards to receive them one by one. The support then moves back and places the signature under needles f, f^2, of which one or more pairs are carried in holders F attached to a laterally-movable bar E, the motion of which can be varied at will. The bar E is mounted in a vertically-moving frame D which also carries hooks g^2, and in its movements drives both needles and hooks through the signatures. Two kinds of stitches are shown in Figs. 41 and 42; the former is employed when tapes O are to be stitched to the signatures, and the latter when they are dispensed with. They differ only in the fact that the bar E is moved laterally in the former case, but not in the latter. The mode of forming the stitch is shown in Fig. 26. The needles f, f^2 and hook g^2 having penetrated the signature, the thread of, say, the needle f^2 is engaged

FIG. 3

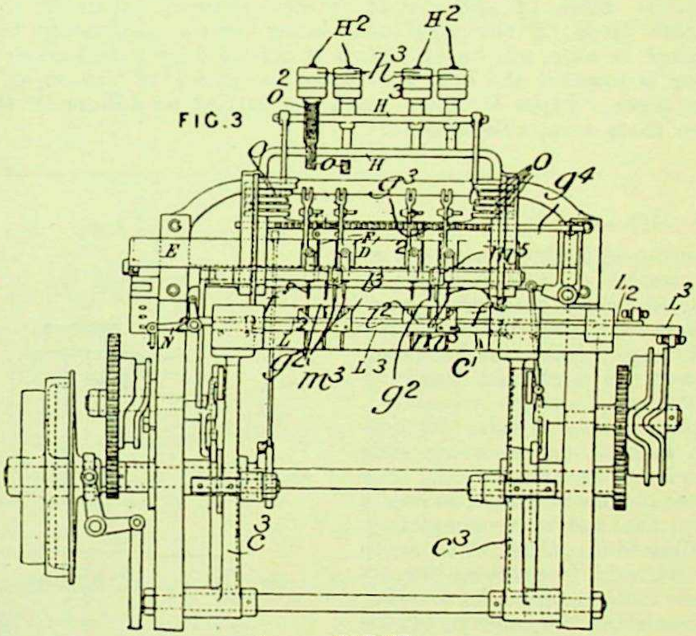


FIG. 8.

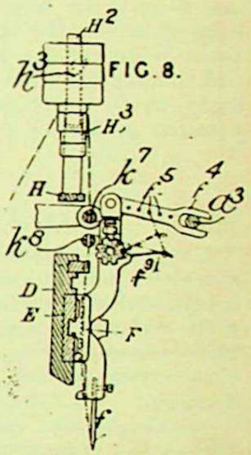


FIG. 42

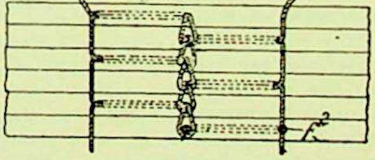


FIG. 26

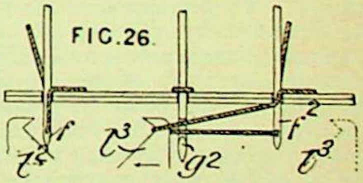
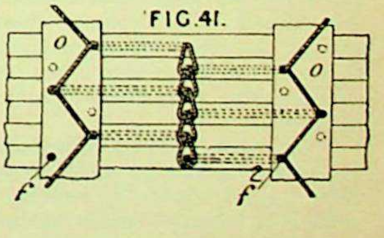


FIG. 41.



by a looper l^3 mounted on a reciprocating rod L^3 and shown at its initial position in dotted lines in Fig. 26. The looper carries a loop of thread up to the hook g^2, and causes it to engage therewith by a slight tilting movement which is imparted to the rod L^3. The needles and hook now ascend, and the latter draws up the loop—which is then released by the looper—through the loop previously formed. In order to clear the latter the hook is made to rotate through 180° by a pinion g^3, to which it is attached, engaged by a sliding rack g^4. The other needle f has meanwhile merely pierced the signature without making a stitch. This needle, however, in conjunction with the hook and a looper l^2 carried on a rod L^2 and similar and similarly actuated to the looper l^3, makes the next stitch, the loop of which is drawn through the loop just made by the needle f^2, and so on alternately. The needles are guided and supported just before reaching the signatures by a fixed bar provided with holes through which they pass. By mounting the needles of each pair on separate frames, the necessity for one of them making an idle stitch each time can be avoided.

Governing needle thread.—The thread passes from spools at the back of the machine through slots in pins H^2 on a fixed bar H. The pins carry weights h^3, and pass through a vertically-reciprocating bar H^3, between which and the weights the thread passes. The thread is locked and drawn upwards when the bar rises, but is released when it falls. The bar moves with the frame D. Thence the thread passes through a hole in a vertically-reciprocating bar k^7, Fig. 8, and so through one of a number of holes f^5 in a lever f^4, through an eye in an adjustable spring take-up f^9, and through a fixed rod k^5 to the needle. The lever f^4 works on a fixed rod a^3 and is pivoted to the top of the needle holder. A modified form of take-up for drawing the stitches tight is also described.

Guiding materials.—The needle-supporting bar is perforated to receive plungers m^3 operated by arms m^5 on a rocking -shaft. These plungers push back the signatures on to a support as they are sewn. An alternative form of this device is also shown. In order to prevent unevenness consequent on the thread loops of the signatures being drawn alternately in opposite directions, there is provided a gauge or stop, not shown, which is actuated by a bell-crank lever N^2. When the pull on the thread loop is towards the left, the gauge is moved to the right, and thus keeps the signature in its proper place. Tapes O, when used, are carried on rollers O^2 and passed in and out between rods o to give them a suitable tension.

22,991. Gare, T. Oct. 7.

Boot-sole stitching-machines; leather, sewing; loop-stitching; wax-thread machines.—This machine is intended for operating on thick materials generally, and makes a stitch with waxed thread such as is shown in Fig. 3, loops of the thread being driven through the material and held there by friction.

Needle-driving; needles; needle-shields; perforating-devices; feed.—A laterally-reciprocating slide e carries a needle slide h and an awl slide g. The awl g^1 partially perforates the work, then moves it sideways, and finally perforates it completely. The needle h^1 is hollowed at the end so as to engage with the thread, and is grooved for its reception. e^1 is a needle shield acted on by a spring and perforated as shown for the passage of the thread. The mounting of the needle and awl may be modified by pivoting the carriages in which their slides reciprocate vertically on a vertical rod.

Governing needle thread; presser-feet; marking-attachments.—In order to prevent the stitch just made from being pulled out by the needle, a presser-foot i is provided having a point i^2 and a roughened under surface which pricks the material and holds the thread. The presser-foot is mounted on springs, and rises while the feed is being effected. a^2 is a thread-guide supported on the slide e. In a modification, the presser-foot and pricker are separate.

Work-supports.—An adjustable lever b is connected to a pedal by which it can be depressed in order to introduce the work. On releasing the pedal it is forced upwards against the work, and is then clamped in position.

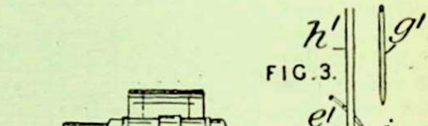


FIG.3.
FIG.1.

23,205. Shatford, P. Oct. 9.

Sewing - machine feed ; presser lifted automatically.—Consists in providing an upper feed acting with the lower one. The presser-foot A¹, which may be roughened, is carried on a bar A pivoted at A² on a vertically - reciprocating rod, and oscillated by a wiper B. The wiper has a friction roller B² acting on a block F mounted on a link which is pivoted on the bar A and adjusted by an eccentric G so as to regulate the length of feed. The wiper is formed on the link B¹, which connects the needle-bar with its operating crank disc D. The block C¹ in which the link B¹ is pivoted may be guided in the framing, so as to avoid any straining of the parts due to the action of the feed. The return movement of the presser-foot is effected by a spring H.

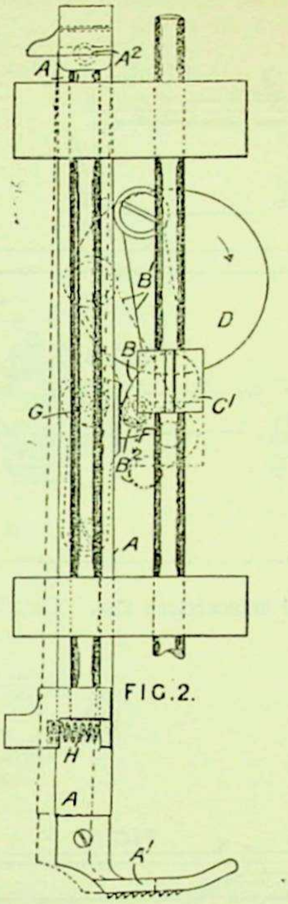


FIG.2.

23,408. Agan, D. H., and Agan, J. Oct. 12.

Overedge-stitching machines ; glove-sewing machines ; needle-driving.—Fig. 1 shows a horizontal section of the machine. An eccentric on the main shaft B works in a gap in the needle-bar, which moves horizontally. The work is held between discs C, C¹, and the stitching is effected by loopers G, K, the former of which moves from one side to the other of the work and carries the loop of thread over its edge in the manner shown in Figs. 6 to 10. The looper G is mounted in a carrier G¹, which can oscillate about its axis in a carriage G². The oscillating movement is given by a cam acting on a pin g^3, and the carriage G² is given a to-and-fro as well as a vertical movement. The looper K, which always remains at the same side of the work, is mounted and actuated in a similar way, except that it can have a longitudinal movement in its carriage, which movement is, however, opposed by a spring K².

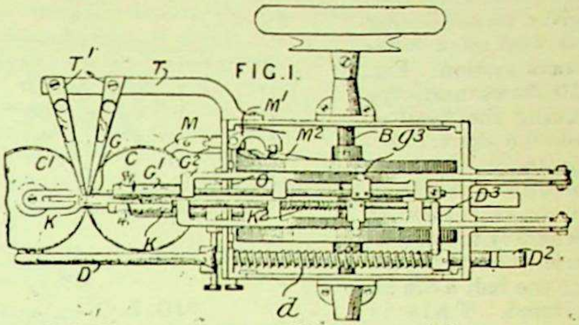


FIG.1.

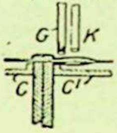


FIG.6.

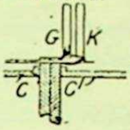


FIG.7.

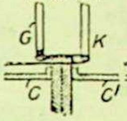


FIG.8.

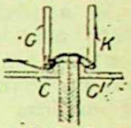


FIG.9.

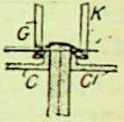


FIG.10.

Work-supports ; feed.—As before stated, the work is clamped between the discs C, C¹. The former is mounted on a sliding rod D, which is surrounded by a coiled spring *d*, and can be moved so as to release the work or to enable new work to be introduced by a lever D². The rod D is connected by an arm D³ with the carrier of the looper K, which is thus moved with the disc C¹ in opposition to the spring K². The feed is effected by the disc C, which is actuated by a pawl driven by a transversely-moving bar O operated by a cam. The throw of the pawl and the consequent feed can be regulated. The feed-pawl acts in concert with a locking-pawl M, which is operated by a cam M² and a lever M¹.

Cords, applying.—Arms T¹, supported on a bracket T, are used for applying cords.

23,430. Boyer, W. H., and American Special Machine Co. Oct. 12.

Chain-stitching machines ; double-loop stitching-machines.—Consists principally of mechanism for actuating the looper of a chain-stitching, double-loop stitching, or overseaming machine. The application is shown to a machine with one looper and two needles *d*, but the invention is also applicable to machines with one or any number of needles and loopers disposed in any suitable way. In the case shown the work-plate is flat, but it may be round or of any other shape. The looper may be used with or without a thread. The needle-bar is driven by an oscillating arm and an eccentric on the main shaft, and a shaft F, which may be the main shaft, carries a head G. The spherical end *h* of a pin H is held against the head by a plate *i*, thus forming a ball-and-socket joint. The pin passes through a shaft I capable of endwise movement and also of oscillation, and carrying a looper-holder *n* fitted with projections *q*, between which the pin lies. The looper *o* is thus given an oscillating as well as a sideways motion. Fig. 10 shows means for fixing the head A on the shaft F adjustably by set-screws *s*, s^1, and Fig. 8 shows a method whereby the eccentricity of the path of the ball *h* can be altered. This is done by making its socket in a plate G^2, which can be fixed on the head G by screws *v* in the desired position.

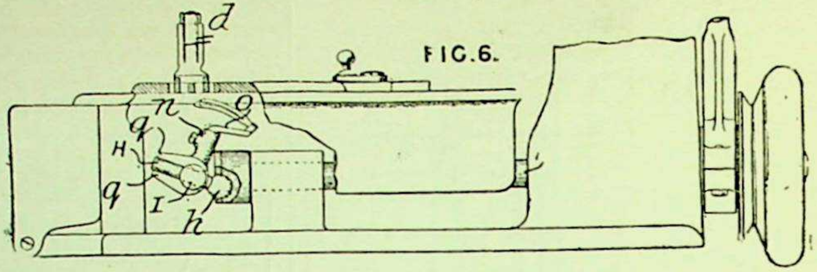


FIG.6.

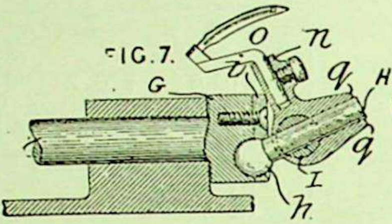


FIG.7.

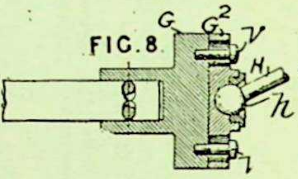


FIG.8.

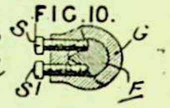


FIG.10.

23,431. Boyer, W. H., and **American Special Machine Co.** Oct. 12.

Chain-stitching machines; double-loop stitching-machines.—The application to a machine with two needles is shown. The loopers are carried on a shaft carrying a fork E, adjustably connected to it by screws *g*. Between the sides of the fork an inclined crank *c* on the main shaft C works, and oscillates the loopers. The main shaft also carries an eccentric F which is situated between jaws at the rear end of the fork, and thus gives the looper shaft an endways movement.

Governing under thread.—The looper thread, or threads, pass through a spring clip *m*, which is periodically closed by a downward extension *t* on the needle arm. The thread also passes through eyes on an arm *k* projecting from the extension *t*, and between the eyes is a fixed arm *l*.

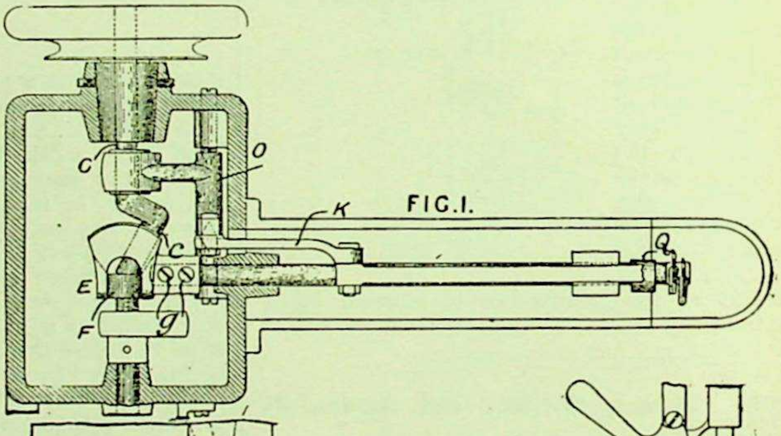


FIG.1.

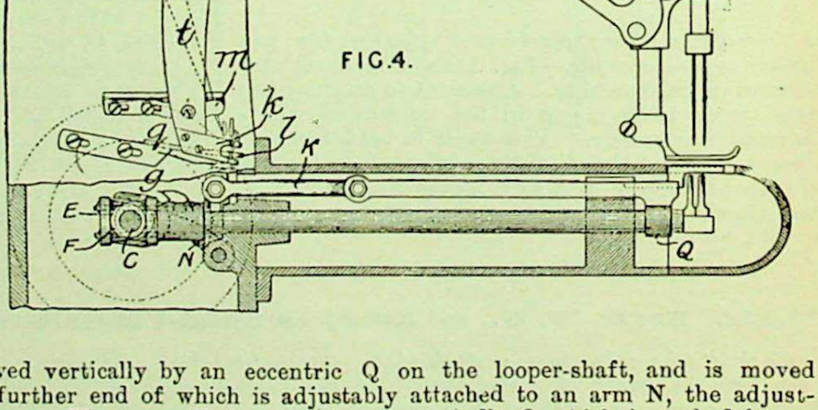


FIG.4.

Feed.—The feed-dog is moved vertically by an eccentric Q on the looper-shaft, and is moved horizontally by a link K, the further end of which is adjustably attached to an arm N, the adjustment being effected by a screw *q*. The arm N is carried on a spindle O which is rocked by an eccentric on the main shaft.

24,365. Arbes, J. Oct. 21.

FIG.3.

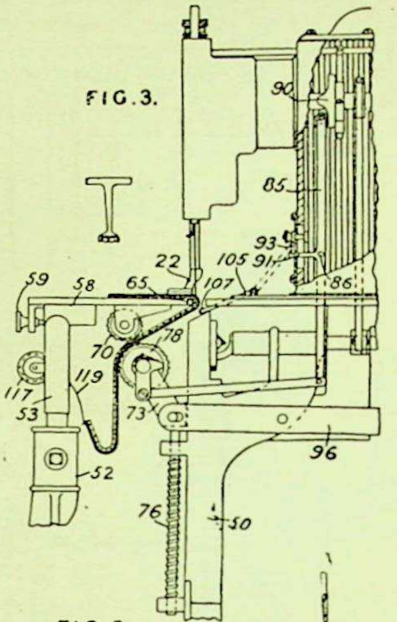
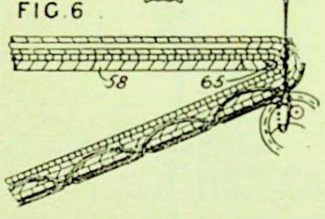


FIG 6



Sewing-machines, blind-stitching in.—A specimen of the stitch is shown in Fig. 6, from which it appears that the seam lies perpendicularly to the bend of the material, one line only of stitches thus showing. The stitches may overlap or not according to the amount of feed. The machine may be used for sewing lining to furs, and is of any lock-stitch type.

Work-supports.—An auxiliary cloth plate 58 is attached to the bed of the machine by an arm 50 which is bent down and sideways so as to be clear of the work. It can be adjusted by a screw 59 so as to regulate the depth to which the needle penetrates the work, and its support 53 can also be adjusted in the socket 52 on the arm 50. On the edge which lies next to the needle it carries a roller 65, which may be fitted with teeth to engage with the work and prevent it from stretching.

Feed.—Underneath the cloth plate 58 is an idle rubber-covered feed-roller 70, against which the work is pressed by a similarly-constructed roller 78, which is positively actuated by a pawl and ratchet device the motion of which is derived from a cam 90. The lever 85, which is immediately actuated by the cam, is pivoted at 86, and has a projecting arm 91, the movement of which can be limited by an adjustable stop 93, and the amount of feed thus determined. The feed-roller 78 is carried in a fork 73, and is pressed upwards by parallel springs, one of which is shown at 76, so that the work is gripped between the rollers. At the commencement of the operation of stitching, the end of the work is hooked to a tape 119, which is wound on a spring take-up roller 117 and is passed between the feed-rollers. A lever 96 operated by a pedal separates the feed-rollers when work has to be inserted or removed.

Needle-shields.—A small roller 107, which is mounted on a pivoted arm 105 so that it can be turned back when not required, presses on the needle so as to resist the tendency of the work to bend it, and guides it into the hole of the shuttle case.

Presser lifted automatically.—The presser-foot 22, which is shod with india-rubber, is raised to allow the feed to act, by a cam.

24,462. Inslee, W. H., [*Singer Manufacturing Co.*]. Oct. 22.

FIG.1.

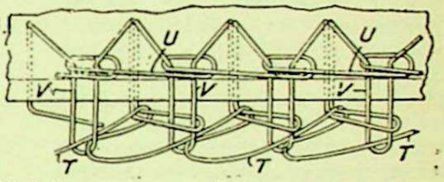


FIG.7.

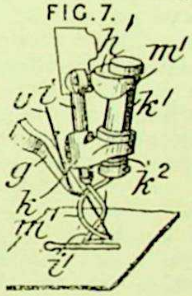
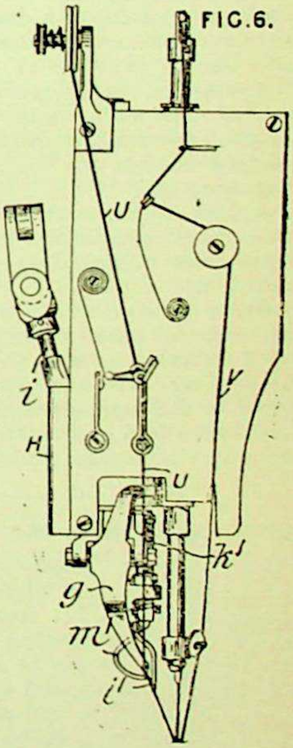


FIG.6.



Overedge-stitching machines.—The invention may be applied to machines such as are described in Specification No. 5078, A.D. 1887, and relates to machines specially applicable to buttonhole sewing. The stitch is shown in Fig. 1, where the threads V and T make an overedge double-loop stitch, and the invention consists in applying a third thread U in loops which either embrace the threads of the overedge stitches as shown, or else those of the stitches which penetrate the fabric. The thread U passes through an eye on an arm *g*, which is pivoted on the head and has its upper end kept in contact with the rocking needle-bar frame, in the movements of which it participates, and thus moves the thread U into the proper position for being wound round the needle every other stitch. A bracket H carries a sliding rod *i* which is also reciprocated every alternate stitch, and carries on its lower end a thread arm i^1 and also a bracket *k*, which supports a vertical spindle k^1. This spindle also has a thread arm m^1, and is turned about its axis in one direction by a fixed roller acting in a cam h^1, and in the other by a spring k^2. The action of the arm *g* and the thread arms i^1 and m^1 in forming a triangular loop through which the needle passes is clearly shown in Fig. 7. Cords may be applied in this machine.

24,553. Baum, G. Oct. 23.

Hem-stitching machines; needle-bars, vibrating laterally; perforating-devices.—In this case two needles n^1, n^2, situated about the length of a stitch apart in the line of feed when in their closed position, are employed. A piercer *b* is in advance of the front needle, and a shaper *s* behind the rear one at about the same distance. The needle-holders are connected to arms c^1, c^2 which are moved in and out by toggles *d*. The toggles are opened and closed by an eccentric *e* on a countershaft w^1 acting in a projecting arm f^1. The eccentric has three steps, either of which can be made to operate on the arm f^1 for altering the lateral movement of the needles. The piercer and shaper are carried on hinged supports, and can thus be moved out of the way when not required. The seam is shown in Fig. 11, stitches similarly figured being made simultaneously. The piercer makes a hole in front of the leading needle while the shaper finishes the hole behind the following one.

Lock-stitch shuttle mechanism.—The shuttles S^1, S^2 are driven by cranks oppositely set in its shaft and are separated by a plate P which is grooved to receive the needles, the upper ends of the grooves being bevelled to avoid injuring the thread.

Presser-feet; work-supports. — The presser-foot and work-plate are perforated with separate holes for the needles, piercer, and shaper.

Feed.—The feed is effected by two metal bands T, situated side by side and composed of links. They are driven by hexagonal pulleys Q, Q^1.

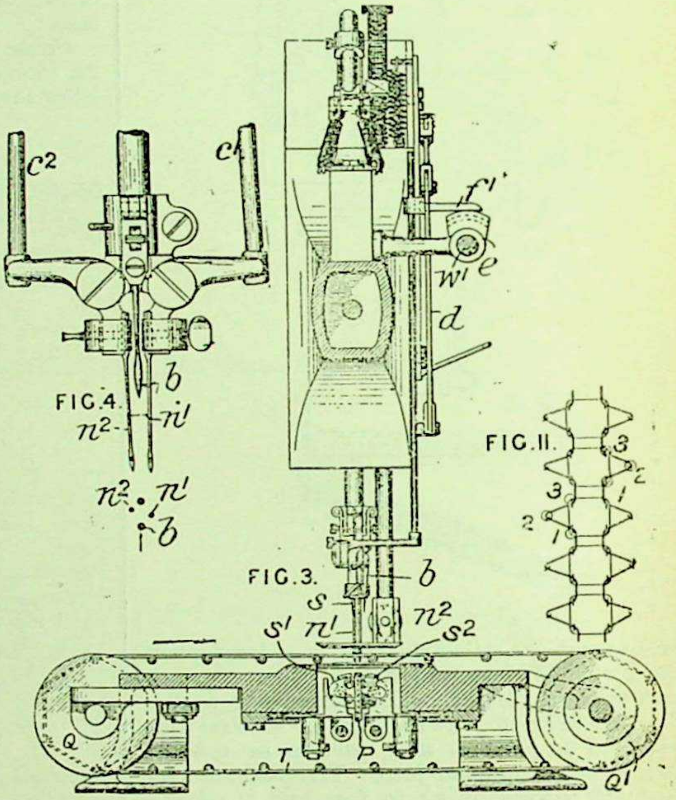


FIG.4.
FIG.3.
FIG.11.

24,596. Birkbeck, H., [*Elger, W. D.*]. Oct. 23.

Sewing-machines, blind-stitching in; overedge-stitching.—Consists of an attachment for performing these operations. A socket D is fixed by a set-screw to the presser-bar E, and carries the presser-foot A, which can be adjusted to and from the needle *a* by a screw, and clamped in any desired position. Attached to the presser-foot is a plate K which carries in a vertical plane a bell-crank lever L, M oscillated by the needle bar. The arm M of the lever actuates a slide P which carries a pawl Q and thus operates a six-toothed ratchet-wheel R. The ratchet-wheel has a three-cornered cam S which moves a slide U in and out, so that a fork U^1 on its end alternately presses the work away from the needle, and lets it return by its own resilience. The needle passes between the prongs

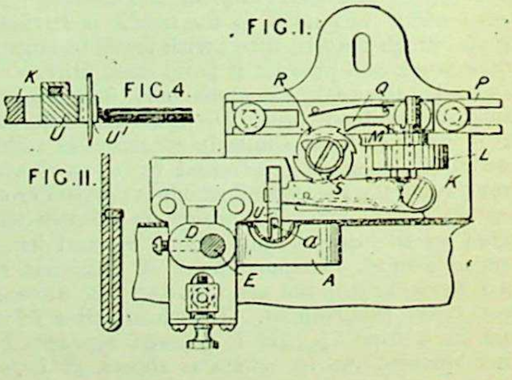


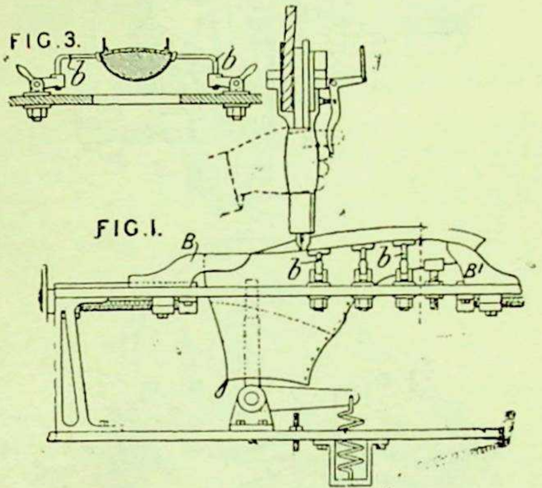
FIG.1.
FIG 4.
FIG.11.

of the fork when the fork is pushed out. The result is that the needle alternately penetrates the work and misses it, thus producing an overedge stitch. If the work be folded as shown in Fig. 4, and the presser-foot correctly adjusted, a blind stitch is produced, which has the appearance shown in Fig. 11 when the work is opened out again.

24,811. Lake, H. H., [*Goddu, N.*, and *Goddu, G.*]. Oct. 26.

FIG. 3.

FIG. 1.

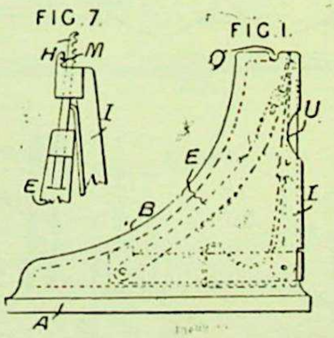


Boot-sole stitching-machines. — The sewing-machine described in Specification No. 28,029, A.D. 1896, is used to sew a boot upper to a lip on the inner sole. The upper is clamped to the last by heel and toe pressers B, B¹ and side pressers *b* substantially of the form shown, so that they serve as work-supports for the machine.

25,055. Darling, J. Oct. 29.

FIG. 7.

FIG. 1.



Needle-threaders. —The standard B is mounted on a heavy base A and has a central slot in which the working parts are contained. These consist of a spring lever I and a threading-lever E carrying at its end the threader H which is made in various sizes and is interchangeable. At the head of the standard is a recess O across which the end of the thread is placed. When the needle is to be threaded, its eye-end is pushed into the front of the apparatus along a groove in the top of the lever I and against the stop M. The lever I is thrust back and, carrying with it the threading-lever, the threader H is pushed up through a slit in the lever I and through the eye of the needle. As the needle is removed, the threader seizes the thread and draws it through the eye. The thread may be released by pushing back the lever I, a cut-away part U allowing this to be done.

25,261. Flanagan, D. Nov. 1.

FIG. 4.

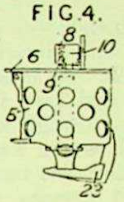
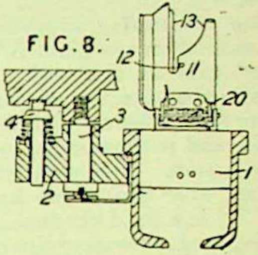


FIG. 8.



Lock-stitch hook sewing-machines.—Relates to improvements in the apparatus described in Specification No. 2647, A.D. 1892, with regard to the reel case and carrier and the feed-motion for regulating the length of the stitch.

Spool-holders; governing under thread. — The spool carrier, Fig. 4, is placed in a holder 1, Fig. 8, mounted on an arm 2 swinging about a pivot 3 and locked in position by a spring pin 4. By moving a lever (not shown) the pin can be released and the arm is turned by a spring to bring the holder beneath an opening in the bed (covered normally by a slide) when the spring 20 throws open the lid 11. 12 is a guide-slit for the thread, an open part 13 allowing the thread to be readily slipped into place, flanges being provided for better guidance. The cover 6 of the spool-carrier 5 has a tension block 10 with spiral spring 9, the tension being regulated by turning a screw 8. Projections 23, between which the loop-carrier passes, allow the thread to pass freely from the spool-carrier 5 to the interior of the carrier, the tension of the thread slightly lifting the carrier in the holder 1.

Feed.—The rocking movement of the feed-shaft is received from the main shaft through an eccentric, two links, and a crank, the play being regulated to govern the length of the stitch, by adjusting a pivot pin in a slot in the link rocked by the eccentric.

25,365. Farr, H. G. Nov. 2.

Boot-sole stitching-machines; needle-driving; needle-shields.—The invention consists of a machine for performing the operations of lasting and stitching simultaneously. The lasting is effected by a roller C³ mounted on a slide C which is pressed outwards by a spring c². Motion is transmitted to the roller by chain and sprocket and bevel gearing, one of the bevel-wheels being splined on the shaft B¹⁰, which actuates the roller, and is carried by, and moves with, the slide. The slide is forced in by the operator pressing against the work, and is fixed at the proper moment, so as to form a stationary abutment while the stitch is being made, by a ratchet and pawl operated by a cam on the main shaft. The needle *b*³, driven by a cam, is carried in a holder pivoted on a fixed part of the frame, and passes through an eye in a shield *b*⁵ which is acted on by a spring so as to be pressed towards the work as far as permitted by a projection on the channel guide F. It is moved away from the work by the needle-clamping plate b^9.

Perforating-devices; feed.—The awl-carrier is driven similarly to the needle, and is mounted on a plate A^3 which can oscillate laterally, so as to effect the feed, on a pin $A^{3\times}$ situated at the rear of the machine. The plate is moved by an adjustable link E^5 universally jointed to it and actuated by a cam.

Guiding materials; work-supports.—G is a welt guide mounted on the plate A^3 and turning about the same axis as the awl. It is locked just previous to the entrance of the awl into the work by a lever G^1. The welt passes through a hole in the guide, and is thus presented to the awl in the correct position. The welt guide also turns down the upper over the insole and presses the welt upon it. F is a fixed channel guide.

Needles, hook, threading-devices for.—The waxed thread is presented to the needle by a looper d carried by a plate d^1 which is attached to a lever d^3 by screws and slots so as to enable it to slide adjustably thereon. A to-and-fro motion is given to the plate d^1 by a lever f^1 which engages with a notch in it, while a circular motion is imparted to the lever d^3 by cams which engage with rollers d^9 and d^{13}. To allow of universal motion, the lever d^3 is pivoted on a rotatable stud d^6 which is acted on by a spring d^8 so as to keep the roller d^{13} in contact with its cam C^8. The lever f^1 is operated by a lever f^4 in the manner shown in Fig. 6.

Governing needle thread.—m^5 is a take-up sheave on an oscillating arm m^4 the end of which acts on a pawl and periodically releases another sheave over which the thread passes. A sufficient amount of thread for each stitch can thus be drawn off.

FIG. 5.

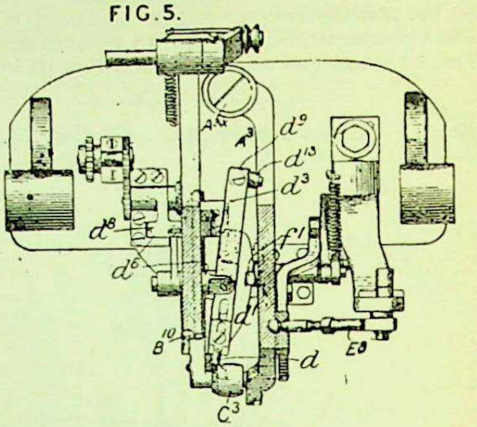
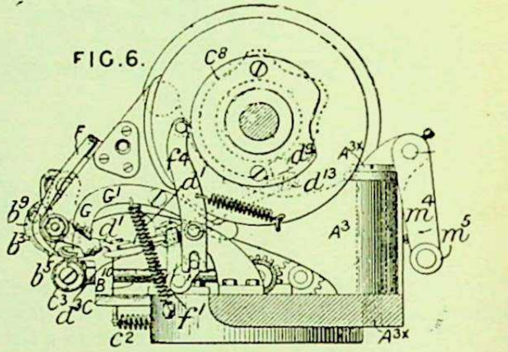


FIG. 6.



25,739. Gegauf, K. F. Nov. 5.

Lock-stitch shuttle sewing-machines; ornamental-sewing machines.—The machine is for hollow hem sewing, the borer b moving independently of the needles n^1, n^2. When the inner stitches (two for each lateral stitch) are made, the borer enters the material before the needles, which pass down in somewhat obliquely-placed grooves in its sides and widen the hole. The borer is withdrawn before the needles. In making the lateral stitches the needles are spread apart as shown in Fig. 13.

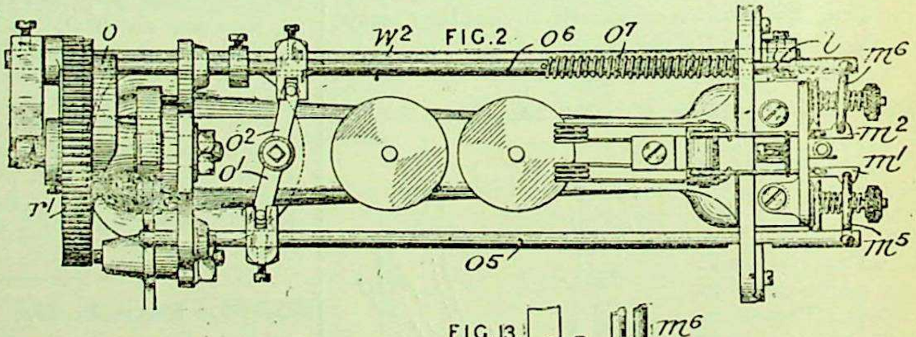


FIG. 12.

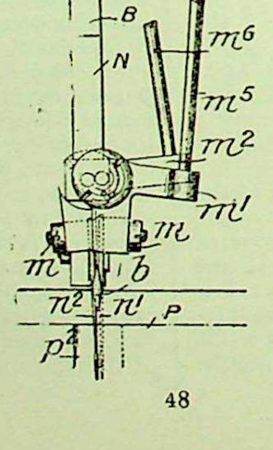
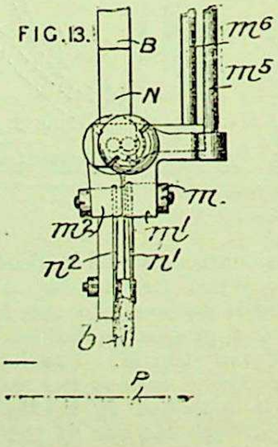


FIG. 13.



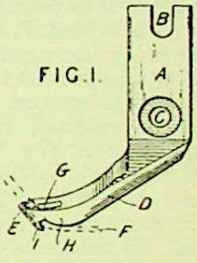
Needle-holders ; perforating-devices ; needle-driving.—The needles are clamped by screws m in L-shaped holders m^1, m^2 pivoted on discs fixed to the needle-bar N, and rods m^5, m^6 connect the holders to sliding rods o^5, o^6, Fig. 2, through which they work freely. The rods are connected by a double crank o^1, o^2 so as to slide in opposite directions, and the rod o^6 is thrust in one direction by a cam O on the wheel r^1 geared to the handle, and in the other by a spring o^7 ; this arrangement gives the requisite rocking movement to the holders m^1, m^2 for opening and closing the needles. The wheel r^1 is geared so as to rotate once for every three turns of the handle, that is, the needles open and close while three stitches are being made. The borer is carried by a bar B which is reciprocated by a crank l on a cam-rocked spindle w^2.

Lock-stitch shuttles.—The shuttle races are separated by a narrow partition P recessed at either side, as at p^2, for the entry of the needle.

25,950. Ardill, W. B., and **Hawley, F. W.** Nov. 8.

Boot-sole stitching-machines ; guiding materials.—The invention relates to welt guides. The body A has a slot B and hole C for attachment to the machine. The foot D lies in about the same plane as the body and has a hole E through which the welt F passes. G is a slot for the needle. The foot is cut away, leaving a projection H against which the welt bears, its displacement being thus prevented. I is a projecting lip which prevents the leather from being cut and holds the welt up to the needle.

FIG. 1.



26,014. Entwisle, J., [*Kursheedt Manufacturing Co.*]. Nov. 9.

FIG. 4.

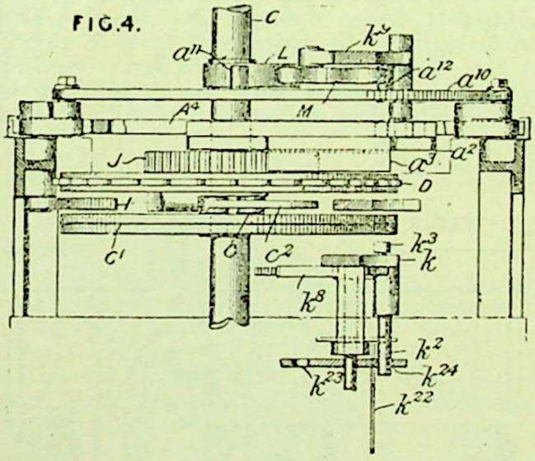
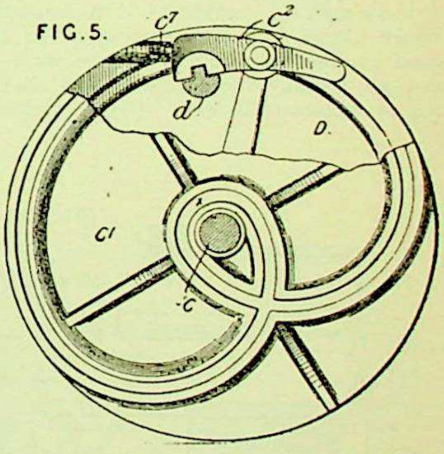
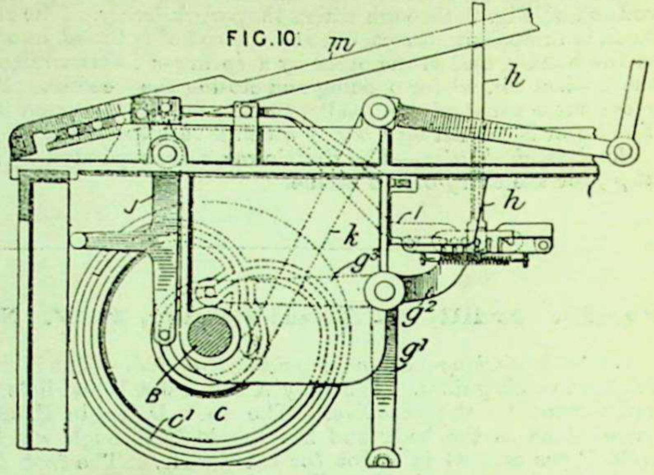


FIG. 5.



Embroidery.—Relates to an embroidering-machine, and is comprised under three heads. (1) A device for automatically disconnecting the embroidering-mechanism from the driving-mechanism so that other operations than stitching (such as perforating the fabric) may be performed while the embroidery frame is still connected with the prime mover. In Figs. 4 and 5, a cam-plate C^1 is keyed on the main driving-shaft C, which also carries loosely a sprocket-wheel D whence motion is communicated to the embroidering-mechanism. The cam-plate and the sprocket-wheel can be coupled together by a catch c^2, Fig. 5, which can be disengaged from the lug d and caught by the pin c^7, thus keeping the parts independent. The disengagement is effected by a three-armed lever K, one of the arms k of which has a sliding pin k^2 provided with a crescent k^3 which can be engaged with the groove c in the cam-plate by a rod k^{22} operated by the jacquard. In its inoperative positions the pin k^2 lies in one of the holes k^{23}, k^{24} of a fixed plate, while a spur on the arm k is engaged by a catch k^8, the object being to hold the parts in place for ready connection with the cam. When the connection has been made, an arm of the lever K tilts the catch c^2 and disengages the sprocket-wheel and cam-plate. In order to bring the embroidering-mechanism gradually to rest, the lever K has a third arm k^9, Fig. 3, which moves backwards

FIG. 10.



and forwards a slide a^2 carrying racks a^3 and a^4, capable of engagement, one at a time, with a spur-wheel J on the wheel D, which is thus actuated and slowly brought to rest by the cam acting through the first and third arms of the lever K. This is effected by one of the racks, the other one coming into operation in order to gradually re-start the mechanism. For this purpose, the slide a^2 is carried by a slide A^4 which can be vertically moved by cams a^8 connected by a bar a^{10}. As soon as the slide a^2 has been moved in one direction, the bar a^{10} is actuated by a lever M, which is carried by the arm k^9 and strikes one or other of two pins a^{11}, a^{12}. The lever M is operated by an eccentric L on the shaft C. The other rack is thus placed in position for operating the wheel J, which drives the wheel D at an increasing rate until full speed is attained. At this moment the catch c^2 comes in contact with an arm I, Fig. 4, and is released from the pin c^7 and coupled with the lug *d*. The operation of the embroidery mechanism then proceeds as before. (2) Means whereby various operations, such as the movement and penetration of the fabric perforating-points and the regulation of the tension and of the shuttles, are controlled by the jacquard. In this case B, Fig. 10, is the main shaft and C a cam-plate keyed thereon with cam-grooves at each side. The groove on the opposite side to that shown receives the end of an arm g^1 when such arm has been brought up to it by an arm g^3 which is caused to engage with the groove c^1 by the jacquard. The cam which actuates the arm g^1 is designed so as to cause the perforating-points to approach the work, and then be moved to and fro in it. The motion of the cam is communicated to the perforating-points by an arm g^2 and a rod *h*. The point of connection of the two latter can be adjusted from the jacquard, which causes a lever J to be connected with the cam-groove c^1 and thus move a rod I which shifts a pin on the end of the rod *h* into one or other of a number of holes in the arm g^2. The rod I is fitted with spring catches which yield if an attempt be made to shift the pin too far in either direction and thus prevent breakage. A somewhat similar adjustable device operates the thread take-up through a rod *m*. The motion given to the shuttle shaft can also be varied by a lever *k* which is caused by the jacquard to engage with the cam c^1 at the proper moment. This lever operates a cam-plate which causes the shuttle shaft operating-rod to be connected with one or other of two cams of different throws. (3) A method of balancing the embroidery frame so that different parts of it all receive the same amount of motion. One form of this is shown in Fig. 22. A is the frame and O a counterweight on a lever H which is directly connected to the frame by a rod J, and also with another lever I by a rod N. The lever I also supports the frame by a rod L. This object may also be attained by springs. For small movements no adjustment of the springs is needed in order to provide an efficient counterbalance; but for large movements an automatic adjustment is provided whereby a clutch compresses or releases the springs to the required extent.

FIG. 22.

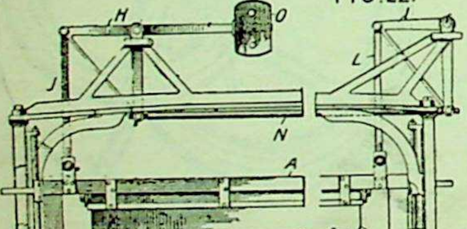
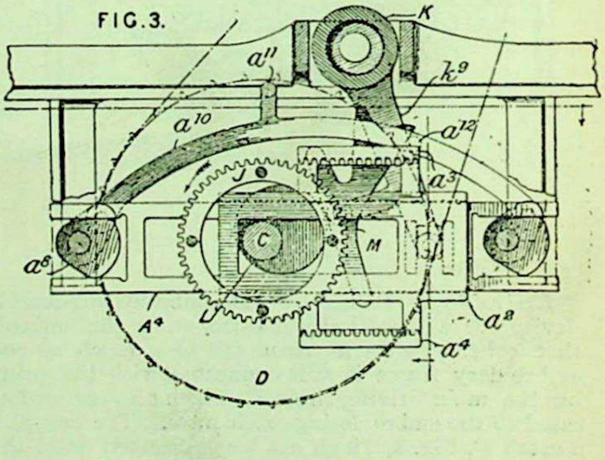


FIG. 3.



26,037. Lake, H. H., [*Ward, J. A.*, and *McLean, J.*]. Nov. 9.

FIG. 59.

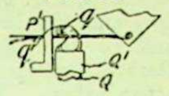


FIG. 60.

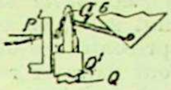


FIG. 61.

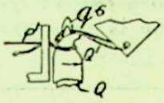


FIG. 62.

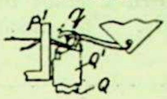


FIG. 63.

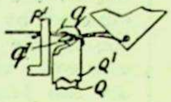


FIG. 64.

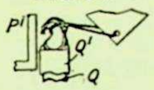


FIG. 65.

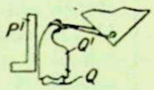


FIG. 66.

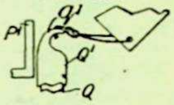


FIG. 1.

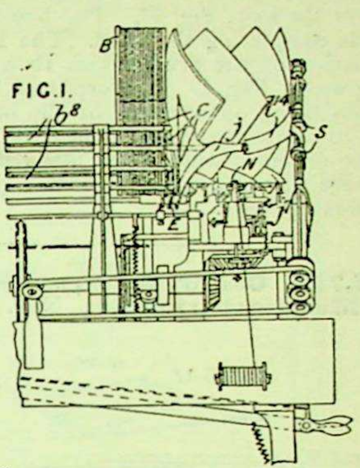


FIG. 34.

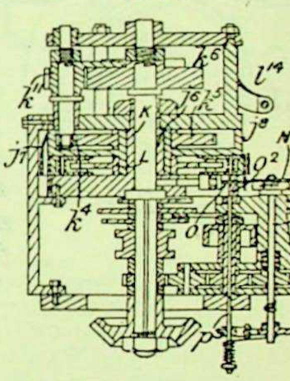


FIG. 42.

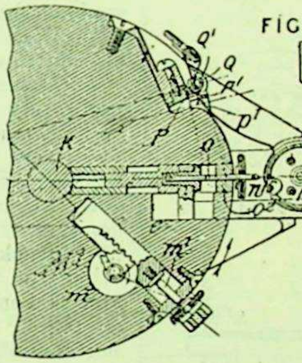
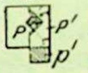


FIG. 46.



Book-stitching machines; feed; needle-holders; needle-driving; governing needle thread; work-supports. — The invention consists of a machine for applying loops of string to books, pamphlets, &c. The pamphlets or 'blanks' are placed resting on their backs and upper edges in a V-shaped supply trough consisting of rods b^8, and are fed forward by pressure applied by a weight to a board B. These rods are intermittently and simultaneously rotated, and carry on their ends wedge-shaped segments c which enter between the blanks and gradually separate them from the remainder of the pile. By means of these and a screw conveyer E operating in conjunction with suitable retaining-fingers, the blanks are fed forward one by one to a revolving vertical drum round which they are wrapped with a corner projecting downwards, by rotating screw-shaped surfaces, one of which is shown at j. The blanks when presented to the drum, are received by jaws or plates j^7 fixed to the drum, and they are clamped against these by inner jaws j^5 which are moved outwards by a cam L, Fig. 34, and are thus fixed until all the operations have been completed. A number of blanks are shown in position on the drum in Fig. 1. The drum is intermittently rotated, through one-eighth of a revolution at a time, by a central spindle K, which conveys the required motion to its hub through mutilated pinions k^6 and k^{11} and complete ones k^4 and k^5, the last being keyed on the hub which is journalled on an arbor j^6. A fixed guide-plate l^{14} assists in holding the blanks in their place. A blank having thus been fixed on the drum, the latter moves on and presents it to a punch m^1, Fig. 42, which makes a hole through the lowermost corner, a second blank being at the same time presented to and grasped by the clamping-jaws immediately following. The operation of the machine is in fact continuous, as each time the drum stops a blank is applied to it, the blank in front is punched, the next one is supplied with string, the next one again has a knot tied on the string already supplied, and the leading blank is released from the drum, all these operations being simultaneously performed on different blanks. After punching, the drum moves on and presents the hole in the blank to a hooked needle o which passes through it and engages with the string presented to it by a tension device N, N¹. The upper of these discs N is carried on a rotating shaft n and drives the lower one N¹, which is slightly inclined, by pins. The string is held by a flanged lip n^{12} on the upper disc so that it always lies between the adjacent edges of the discs, and is continuously fed as they revolve. The needle moves forward when a notch n^{15} in the discs is opposite to it, and having drawn the string through the blank it locks it against the edges of an opening in a die o^9. The blank then passes on to the knotting-hooks, the loop falling between cutting-blades P, P¹, the latter of which is movable and is carried by an arm p^1 actuated by a shaft p^3. The blades close on the loop and hold it firmly as shown in Fig. 46, but do not as yet cut. The knotting operation is shown in Figs. 59 to 66. The hooks q, q^1 are formed on cylinders Q, Q¹ which rotate together, but the latter is capable of rising and falling. When the loop is first presented to the hooks, they embrace it as shown in Fig. 59. A central fork q^6 now rises as in Fig. 60 and lifts part of the loop, while the hooks rotate as in Fig. 61, so that, when the fork again falls, the loop is wrapped round the hooks, Fig. 62. The inner hook now drops, carrying the bight of the loop with it, Fig. 63, while by the continued rotation of the hooks the outer one engages with the part of the loop between the hooks and the shears P, P¹. The inner hook now rises again and nips this part against the outer one, at which stage the shears sever the loop, Fig. 64. The hooks then rotate backwards, Fig. 65, and finally shed the bight, Fig. 66, thus completing the knot. The knot is drawn tight and the loop detached from the hooks by the rotation of the drum which then presents the blank to the discharging-apparatus. Part of this is shown in Fig. 1. It consists of four pairs of rollers *s*, each pair being on a separate shaft and two pairs being on one side of the blank and two on the other. Those on the one side move aside so as to allow the drum to place the blank so that it can be grasped when they move back again. The rollers discharge the blank down a shoot into a second V-shaped trough also composed of rods, where they are made up into a pile. The machine is arranged so that it automatically stops should jamming occur.

26,730. Colley, G. H., and **Weeks-Colley Manufacturing Co.** Nov. 16.

FIG.17.

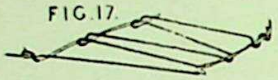


FIG 22.

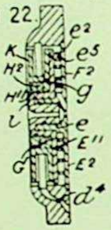


FIG.19.

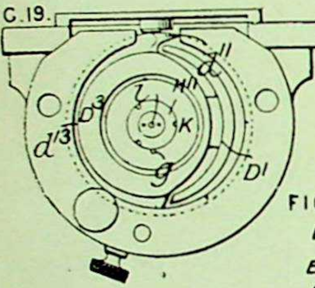


FIG.21.

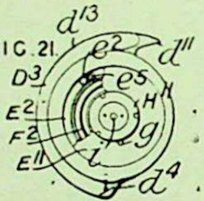
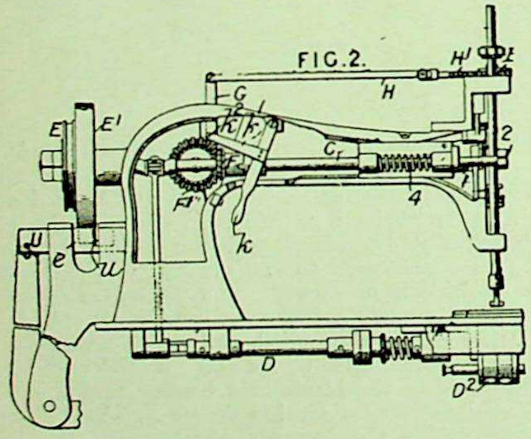


FIG.2.



Embroidery; ornamental-sewing machines.—The invention relates to machines capable of making long stitches for fancy or other work. Two shuttles or hooks are employed so that the under thread only appears at the ends of the stitches instead of forming a duplicate of the design on the underside of the work. The general character of the stitch is shown in Fig. 17, the fabric being omitted. The upper thread is shown by the full line, and the under threads by the open ones.

Needle-driving.—The needle is fixed in the needle-bar so that it can be made to register with either of the holes in the throat plate, corresponding to the shuttles, by simple rotation. This is effected by a rack H¹ engaging with a pinion I in the needle bar. The rack is actuated by a rod H connected with a lever G, operated by a cam-groove on the back of a bevel gear-wheel F¹. The corresponding gear-wheel F runs loosely on the main shaft C, but can be connected therewith by a clutch operated by a handle *k*. A pin *k*² on an arm *k*¹ projecting from the handle engages with the wheel F when the clutch is disconnected, and thus causes it to stop at once. This disconnecting-device, which may be modified in construction, enables the operator to make successive stitches with either shuttle. When the clutch is disconnected the shuttles make alternate stitches.

Lock-stitch hook sewing-machines.—The shuttles preferably consist of oscillating hooks D³, Figs. 19 and 21, running in a race D², Fig. 2, and operated by drivers D¹ actuated by an oscillating shaft D, which may be disconnected by a clutch for convenience in removing the shuttles. The shuttle consists of a ring *d*¹³ having a hook *d*¹¹ and closed at the back by a plate E². The plate has a hollow arbor *e* on which another plate E¹¹ is loosely fitted, and is kept in adjustable frictional contact with a ring G¹ by lock-nuts H², H¹¹. It is also connected with the arbor *e* by a coiled spring F², the opposite end of which is attached to a pin *e*⁵ on the plate E¹¹. The plate E² also has a pin *e*² which engages with the pin *e*⁵, and limits the movement of the plate E¹¹. The bobbin K has a recess engaging with a pin *g* on the friction ring G¹, and is thus frictionally connected with the plate E¹¹. The result of the arrangement is that enough thread is given off by the bobbin against the action of the spring to enable the work to be moved a considerable distance by hand when it is required to make a stitch with the other shuttle. The spring takes up the slack thread when the work is moved back again. The thread actually used in the stitch is given off by the rotation of the bobbin permitted by the frictional connection of the ring G¹ and the plate E¹¹. In the case shown, the hooks rotate in vertical planes, but in another form of machine they rotate in a horizontal plane. The tension of the spring may be made adjustable. The under thread passes out through a hole *d*⁴ in the ring *d*¹³ and then through a central hole *i*.

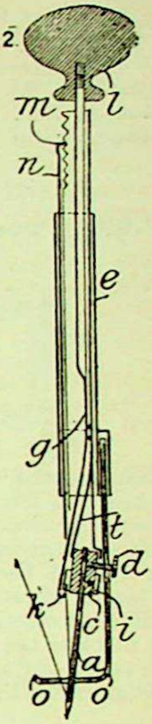
Presser lifted automatically; presser-feet.—As the feed is effected by hand, the presser-foot is raised when the needle leaves the work. This is done by a rocking shaft 1 operated by the main shaft C and by a spring 4. The shaft 1 has a forked arm 2 engaging with a pin on the needle-bar. Means may also be adopted for giving the presser-foot an oscillating movement corresponding with that of the needle-bar, bringing the hole in it into register with the holes in the throat-plate alternately.

Driving; stopping-gear.—In the ordinary course of the work stitches are made with both shuttles alternately, but to give time for moving the work the machine can be caused to stop between each stitch. For this purpose, the driving-pulley E is loose on the main shaft and bears against the fast disc E^1 with sufficient friction to drive it. The disc E^1 has a stop *e* which registers with a notch *u* in a sliding bar U actuated by a treadle. When the treadle is held in an intermediate position, the stop passes freely through the notch, and the machine runs continuously; but by alternate heel and toe pressure on the pedal the bar U is moved to and fro to its extreme positions, thus allowing the stop to pass and arresting it at each stitch.

26,913. Lake, H. H., [*Eisenhert, J.*]. Nov. 17.

Embroidery.—The invention relates to a hand device for doing 'Smyrna' patterns. A needle *a*, the eye of which is near the point, is secured by a set-screw *d* in a carrier *c* mounted on a rod *g* which slides in a casing *e*, and also carries a thread-locking device *i*. The movement of the needle about its pivot is controlled by a spring *t* and can be regulated by a plate *n* which has an edge *m* capable of engaging with notches in the rod *g*, so that its position can be adjusted. The thread is passed through holes in a hook *k* on a rod which passes through the rod *g* and has a handle *l*. A wire frame or foot *o* lies against the work. On depressing the handle *l*, the hook *k* is first lowered, and afterwards the needle, as soon as the handle comes against the rod *g*. When the handle is withdrawn the hook *k* again moves first, and the thread is engaged by the locking-device *i*, which holds it firmly while the needle leaves the work. A loop of thread is thus passed through the work and is afterwards cut.

FIG. 2.



27,525. Robinson, O. Nov. 23.

Boot-sole stitching-machines; chain-stitching; needle-driving; needle-shields. — The needle-holder *d*, the carrier *f* for the shield *f*^{1}, and the welt guide *h* are all pivoted on a common spindle *c*. The needle is driven from a three-cornered cam *i* on the main shaft *b* working within a square frame *i*^{1}, the effect being to make the needle pause at the ends of its stroke to give time for the needle to be threaded and for the feed to take place. The shield is operated by a separate cam.

Needles, hook, threading-devices for; wax-thread machines.—The arrangement is shown in Fig. 5. A tubular looper *k* through which the thread passes receives a conical motion frame rod *k*^{6} operated by an eccentric *k*^{1} on a countershaft *k*^{2} and moving in a guide at *k*^{7}. The countershaft *k*^{2} has a bevel-wheel *l*^{1} gearing with a mutilated pinion *l* on the main shaft *b*, and thus receiving an intermittent motion. At other times it is kept steady by a stop plate *l*^{2} which bears against the flat surface of the pinion *l*. To ensure engagement of the teeth at the proper time, the pinion *l*^{1} is struck by a ledge *l*^{5} on the pinion *l*. The upper part of the looper *k* is covered by a heating-tube *l*^{6}.

FIG. 5.

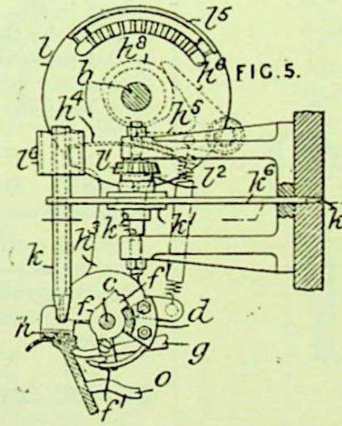
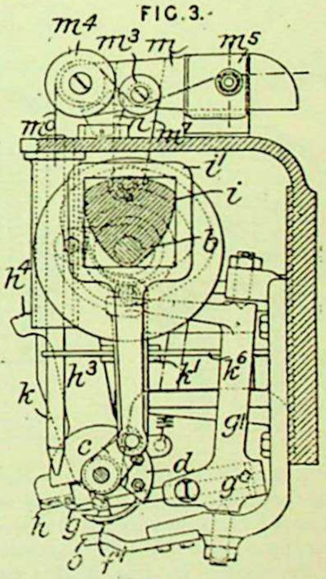


FIG. 3.

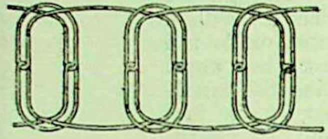


Work-supports; feed; guiding materials.—The welt guide *h* carries an arm *h*^{3} provided with ratchet teeth *h*^{4} engaged by corresponding teeth on a V-shaped lever *h*^{5}, *h*^{6}. The arm *h*^{6} engages with a cam *h*^{8} so that the welt guide is locked while the needle is penetrating the work, but is unlocked at other times. o is a fixed work-support, and g a channel guide which also affects the feed. The latter part is adjustably carried in a socket g° on a lever g^1 actuated by a cam.

Governing needle thread.—The thread m° is engaged by an adjustable tension plate m^5 and passes over pulleys m^3, m^4 on a take-up arm m which has a projection m^7 to communicate the motion to the actuating-cam. The lever m drops as the needle pulls the thread through the work until the pulleys engage with a pivoted stop n which locks them while the stitch is being set.

27,773. Vosper, C. W. Nov. 25.

FIG.5.



Sewing seams; sewing-machines, needle-driving in.—Consists in adapting any ordinary lock-stitch machine to produce the back-stitch seam shown. This is done by giving the needle a vibratory motion in the line of the feed in any suitable way. This motion is adjustable, and when entirely arrested an ordinary lock-stitch is produced. The mode shown for carrying the invention into effect is to mount the needle-bar in a frame to which a reciprocating motion in the line of feed is given.

28,223. Schwarz, J. Nov. 30.

FIG.3.

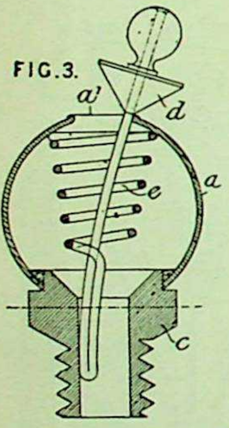
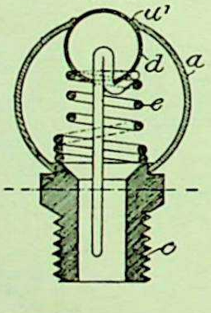


FIG 8.



Sewing-machines, lubricating.—Relates to oil cups for light bearings such as those of sewing-machines &c. The filling-aperture a^1 is closed by a conical valve or by a ball. When a conical valve is employed, as shown in Fig. 3, this valve d is drawn down to its seat by a coiled spring e. The valve may be so shaped that it is returned automatically when released, or may have a shoulder by which it can be retained in the open position. In the construction shown in Fig. 8, a hollow spherical valve d is pressed upwards by the spring e. In both cases the springs are inserted before the cup and stem c are united, and in the second case the ball d is put in as well as the spring.

28,236. Newton, P. A., [*Keats Maschine Gesellschaft*]. Nov. 30.

FIG.4.

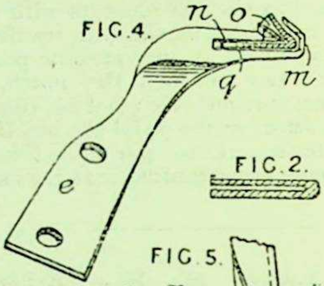
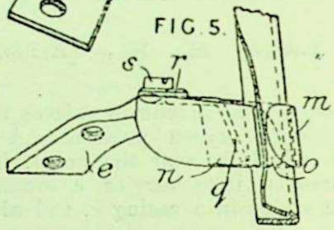


FIG.2.

FIG.5.



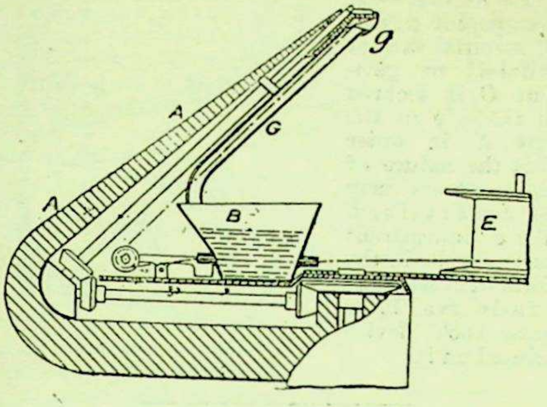
Leather-sewing machines; guiding materials.—Fig. 4 shows an elevation, and Fig. 5 a plan, of an attachment for opening up a split welt such as shown in Fig. 2. It is bolted to the frame of the machine by the tail e, and has a turned-over portion m and an opening-arm n formed with a tongue o. The inner edge of the welt is guided, if desired, by a bent wire q secured by a clamp-plate r and screw s.

28,452. Owen, W. Dec. 2. *Drawings to Specification.*

Sewing-machine needle, knife, and like sharpening attachments. — Consists in providing a rotary sharpening-wheel, which may be mounted on any part of the machine, such as on the bobbin-winding spindle.

28,588. Frankenburg, I. Dec. 3.

Sewing-machines, preparing thread in.—The invention relates chiefly to boot-sole stitching-machines, but is also applicable to sewing-machines generally, and consists in treating the thread with rubber solution instead of wax. The application to a machine with a work-supporting horn A is shown. The thread is carried by a reel E, and is passed through a vessel B containing india-rubber solution in the manner shown or otherwise. Thence it passes upwards through a tube G, the lower end of which is shaped so as to direct drip back into the vessel B, while its upper end is fitted with a drip catcher g. The drip-catcher is movably mounted in the tube so that it can be pushed aside for threading. The thread may alternatively be prepared in a separate apparatus and wound in a reel for use. The rubber solution contains turpentine and paraffin or the like, as well as the usual ingredients.



28,692. Lee, J. Dec. 4.

Sewing seams.—A machine is shown for levelling the seams of leather goods. The work-table G is adjusted in height by means of a nut H', and is supported on a spring adjusted by a nut J. The levelling-tool consists of a roller E mounted, loosely, on an eccentric pin on the spindle B

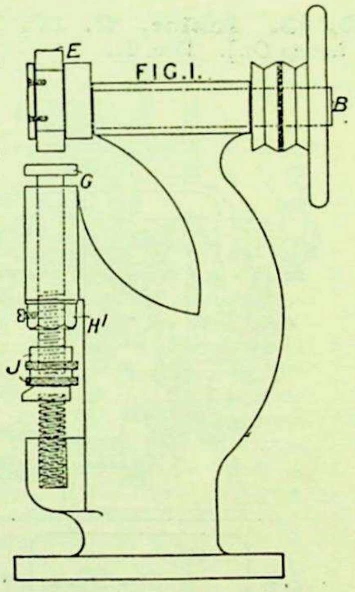


FIG.1.

29,450. Rebbla, J. Dec. 13.

Sewing-machines, driving.—Driving-mechanism for cycles &c. stated in the Provisional Specification to be applicable to sewing-machines. Fig. 1 shows the application to a front-driving bicycle. A chain-wheel C is connected to the wheel B, and a loose wheel E is mounted upon an extension D of the fork A. A chain F passes around the wheels C, E, and is enclosed in a casing P. A pin G carrying a pedal H is attached to a rivet of the chain F, and an arm K which carries a sliding piece L working within the slide M gives a firm support to the pedal. The pin G slides in a guide-slot in the casing P. The mechanism is applied to both sides of the wheel B. By operating the pedals H, the chain F is caused to rotate the wheel C, which in turn imparts its motion to the road wheel B. The mechanism is also described as applied to a rear-driven bicycle, in which the pedal and the pin G are separately mounted on a lever fulcrumed at the sliding piece L. In a modification, the sliding part of the device is replaced by a swinging lever secured to an arm attached to the frame.

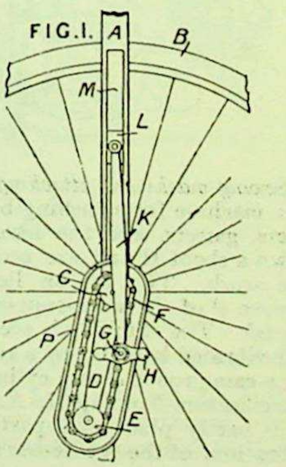


FIG.1.

29,464. Carroll, O. D. Dec. 13.

Sewing-needles; sewing-machine needles.—These are formed with two, three, or more eyes adapted to take a corresponding number of threads.

29,603. Thompson, W. P., [*Cooper, E. M.*]. Dec. 14.

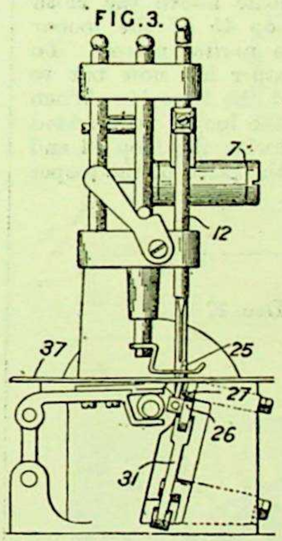


FIG.3.

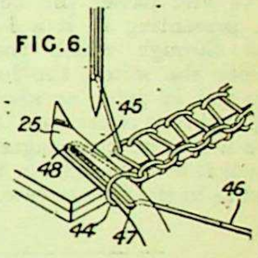


FIG.6.

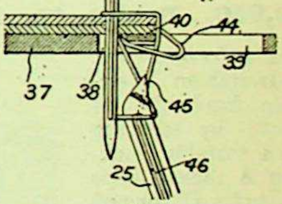


FIG.10.

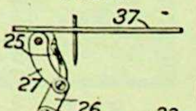


FIG.4.

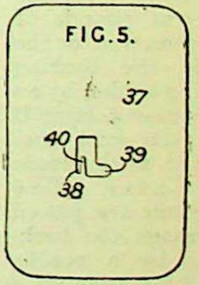


FIG.5.

Overedge stitching machines.—The invention consists of a machine for sewing buttonholes, or for overedge work generally. A take-up is dispensed with, as only just as much thread is free as can be used for each stitch. The machine can therefore be used with a single-strand thread, the softness of which renders the stitch applicable for knitted fabrics. Fig. 3 is a general view showing the disposition of the looper mechanism with respect to the needle. Fig. 4 shows the looper mechanism. The looper 25 is carried in a link 26 pivoted to links 27 and 31, both of which are pivoted on the framing. The link 31 is actuated by a rod 33 pivoted at its opposite end to one arm of a bent lever, the other arm of which actuates the needle-bar 12. This lever is pivoted to the frame at 7. The looper mechanism lies in a sloping plane, from which it will appear that the looper passes the needle to the left below the work-plate and to the right above it, when viewed as in Fig. 3. Fig. 5 shows the cloth plate 37 provided with a slot 38 for the needle and a hole 39 for the looper, the two being separated by a tongue 40. Figs. 10 and 6 show the machine making a double-loop seam. The looper thread 46 passes through holes 47 and 48 in the looper, which is shown in Fig. 10 as having advanced from the position of Fig. 4 and seized a loop 44 of the needle thread. This it passes round the edge of the fabric and over the tongue 40. The looper now passes up through the hole 39 in the work-plate close to the edge of the tongue 40, with which it thus lays the work level, or folds up its edge so as to make a level seam. The looper now slips through the loop 44 and passes the needle above the cloth plate, presenting to it a loop 45 of the looper thread through which the needle passes. To complete the stitch, the looper has now but to return and, in doing so, shed the loop 44. When a looper thread is not used, the looper is provided with a notch, which engages with the loop 44 and presents it to the needle in the place of the looper thread as in the former case.

29,920. Drolet, M. Dec. 17

Embroidery.—Imitation Persian lambskin is made by securing to a suitable backing A raised loops or tufts C formed from strands of unspun wool or the like, the backing being hidden by an interposed layer B of the same material as the loops or tufts. The strands are passed through the backing by a needle, and the ends are secured by a double stitch. If the loops are to be cut, each turn of the strands is so secured.

FIG.1.

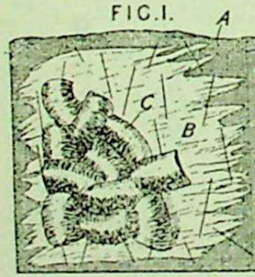
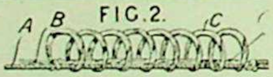


FIG.2.



29,956. Boldt, E. A. Dec. 17.

Needle, pin, and like cases.—A transparent piece of material such as celluloid or gelatine C is secured in the side of the case A in order that the nature of the contents may be ascertained. The transparent part may be in the form of a letter or trade mark, or have such device printed on it.

FIG.3.

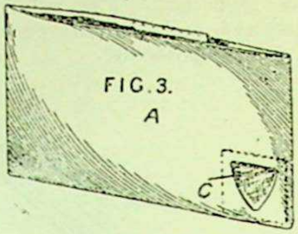
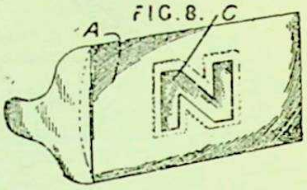


FIG.8.



30,183. Inslee, W. H., [*Singer Manufacturing Co.*]. Dec. 21.

FIG.1.

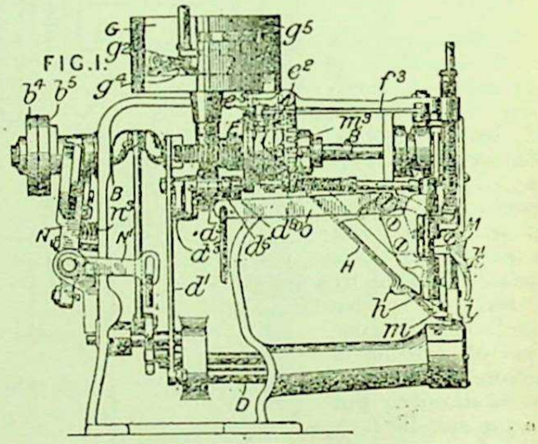
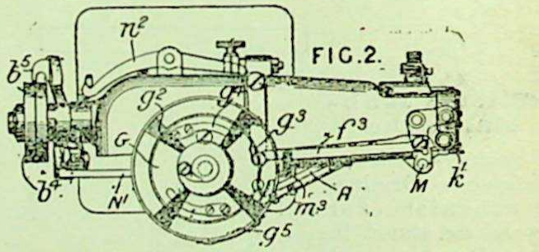


FIG.2.



Sewing-machines, attaching buttons in.—Relates to a machine for attaching buttons with shanks to boots, gaiters, and the like. The buttons slide down a shoot H and are presented one by one to the work. The button lies with its head in a groove i^1 of the work-support and its shank horizontal. The stitching is accomplished by a needle-bar vibrated laterally by a rod f^3 which is actuated by a cam-groove e^2 in a cylinder E, as described in Specification No. 21,637, A.D. 1896. The groove e^2 is partly plain and partly wavy, so that the vibrations of the needle-bar are suspended between the sewing on of the buttons. At this time the feed comes into action, so that a plain seam is made between each button. In order to stop and start the feed, which is of an ordinary type, a groove in the end of the cylinder E is employed. This groove actuates an arm d^3 which is in adjustable engagement (so that the length of stitch can be regulated) with an arm d^6 mounted on a short shaft d^5. The shaft d^5 is connected by a link d^3 with a rod d^1 of which the upper end has a fork embracing the driving-shaft B, and the lower end actuates the rock-shaft D. The cam cylinder E thus suspends the feed at the proper moment. An automatic stop-mechanism is provided consisting of a lever N normally acted on by a spring n^3 so that the tendency is for the lever to shift the driving-bolt from the fast pulley b^5 on to the loose one b^4. The lever is also fitted with suitable stops, which immediately arrest motion when this occurs. The belt is shifted on to the fast pulley by a treadle acting on an arm N^1 of the lever and causing its upper end to engage with a catch n^2 which is automatically released by a pin e^5 on the cylinder E. The buttons are contained in a hopper G in which is a revolving spindle carrying brushes g^2. The brushes sweep the buttons into a shoot in the bottom of the hopper so that their shanks lie in a groove g^3. The brushes are raised periodically by lifters g^1 over which they pass and fall on to the buttons, the shanks of which are entered into the groove g^3. This groove communicates with the shoot H. The buttons pass down the shoot and are kept from coming out at the bottom by a spring h^1 until they are removed, one by one, by an arm m on a vertical shaft M. This shaft is oscillated by a lever m^3, and is connected to it by a spring connection which accommodates itself to different sizes of buttons. The buttons may be removed from the hopper through a sliding door g^5 at the side. Another form of hopper is shown in which the buttons which are about to be forced into the shoot partly project through a slot in the side of the hopper near its bottom, the shanks lying flat against its side. This form is suitable for flat buttons. The throat plate i is slightly raised, and this elevation, together with the notch i^1, accommodates the buttons while they are being sewn on. In cases where the continuous seam is not required, the feed-dog is replaced by a thread cutter and clamp, which cuts the thread as each button is sewn on, and holds its end in readiness for the next one. The presser-foot can be raised by hand by a lever k^1 or by foot by a lever.

30,670. Snell, J. W. Dec. 28.

Boot-sole stitching-machines; stopping-gear.—Consists of improved means for supplying water or other moistening-liquid slightly in advance of the stitching-devices. The starting and stopping lever C¹ is connected by a rod c^1 to a valve C controlling the supply of liquid to the work, so that, when the lever C¹ is depressed to start the machine, the valve C is opened and is held open as long as the lever C¹ is kept down, being closed as soon as the lever is released to stop the machine. The liquid passage a may extend through the presser-foot A, and either terminate at its working end, or, as in Fig. 2, slightly above the same. In another modification, the liquid passage is in the form of a tube on the side of the presser-foot remote from the needle, and terminating slightly above the working end.

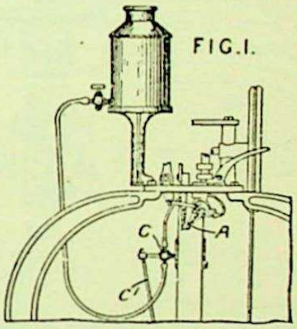


FIG. 1.

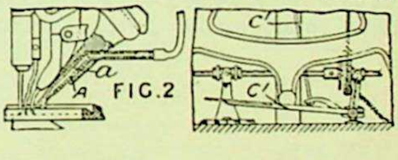
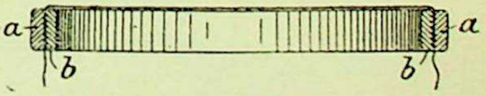


FIG. 2

30,746. Redfern, G. F., [*Krautheimer & Co.*]. Dec. 29.

Embroidery.—The work is held between two rings a and b, the inner of which is roughened on the outside.

FIG. 2


30,884. Shillito, T. R., [*Fabrik für Spezialnäh-Maschinen* (*Patente Julius Gutmann*)]. Dec. 31.

Hem-stitching machines; lock-stitch shuttle sewing-machines; multiple-needle machines; needle-driving. — The invention consists of means for enabling the needle-bar, shuttle races, and other parts to be rotated simultaneously, so that a curved or other shaped hem-stitch can be produced. The needle-bar is enclosed in two sleeves 23 and 14, which are compelled to rotate with it, but have independent vertical movements. Any required rotary motion is communicated to the needle-bar independently of its vertical motion by bevel gears 31 and 33, operated by a handle 43, which rotates to an equal extent a casing carrying the needle plate and the shuttle mechanism. The needles are mounted on blocks 18, capable of lateral movement in a head 17, carried by the needle-bar 19. The blocks 17 are separated at the required intervals by the vertical movements of a suitably-shaped rod 15 which is carried by a collar 13 secured to the sleeve 14. The collar 13 is embraced by a fork 12, carried on a vertically-moving rod 9, which is driven by a cam-actuated lever 8. The rod 15 thus has its own vertical movement independent of the vertical movements of the needle-bar, the rotary movements of which it is, however, compelled to follow. The sleeve 23 which carries the piercer is driven in a similar way. A central sleeve 46 is connected to the cloth plate and also to the casing which carries the shuttles or loop-takers. A vertically-moving collar 50, actuated from the main shaft of the machine by a lever 48, embraces the sleeve 46 so as to turn with it, and in its movements strikes a lever 54 pivoted in the sleeve and carried round with it. The lever 54 has a rack 53 which actuates the shuttle-operating pinions 55.

FIG. 1.

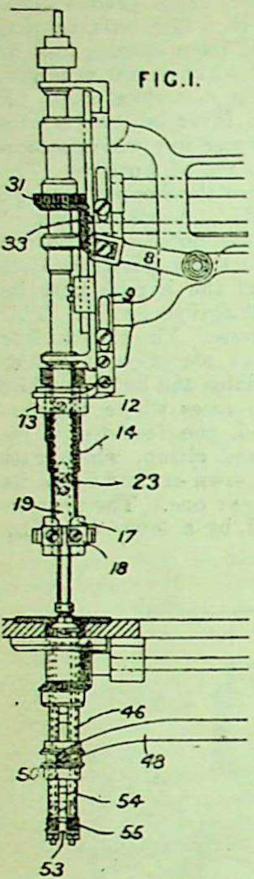
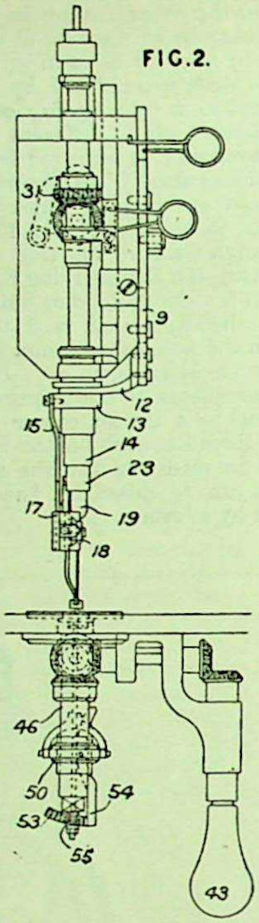


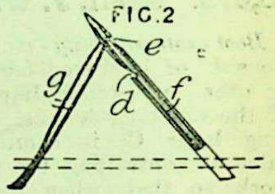
FIG. 2.



30,893. Waring, C. E., and **Liley, E.** Dec. 31.

Sewing-needles.—Relates to packing-needles which may be also used for sewing rough material. On opposite sides of the needle, and near its point, are two slots *d*, *e*, of which *d* inclines towards the point and *e* towards the head. On the other two sides of the needle are longitudinal grooves *f*, extending from beyond the inner ends of the slots to the point. Loops *g*, formed by the slot *d*, can be drawn back to the accessible side of the material by the slot *e*.

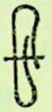
FIG. 2



A.D. 1898.

138. Herrmann, S. Jan. 3.

FIG. 3.



Embroidery.—A strip of fabric folded and sewn down the middle, as shown in section in Fig. 3, is used as a braid for embroidery.

204. Stewart, W. J. Jan. 4

FIG. 3.

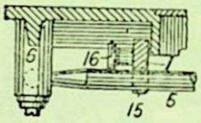
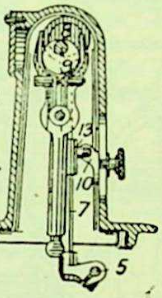


FIG. 2.

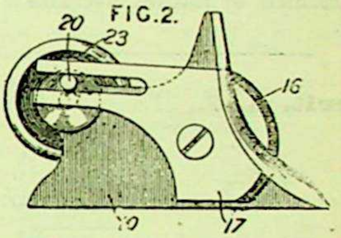


Sewing - machine feed. — The feed-dog is attached at one end to a bar 1, the opposite end of which is slotted. A fixed pin passes through the slot, so that this end is capable of to and fro motion only, while the first-mentioned end can have an up and down one as well. This motion is communicated to it by a rod 5, one of the ends of which is pivoted in a part 6, while the other end is given a circular or oval motion. The rod 5 passes through a slot 15 in the feed-bar and also bears against a pin 16 on the bar, which thus receives the requisite motion. The opposite end of the rod is carried by a foot on a rod 7 which slides through a link 13, and is actuated by an eccentric 8 on the main shaft 9. The link 13 is pivoted to an adjustable block 10 which can be clamped in any position, thus determining the length of the stitch. The vertical movement of the rod 7, and therefore of the feed-dog, is, of course, constant.

220. Lake, H. H., [*Reynolds, F. A., Manning, S. H.,* and *Parker, H. C.*]. Jan. 4.

Sewing-machine thread cutters.—The invention relates to a device for ripping seams, which is chiefly applicable to sewing-machines. A frame or base 10, preferably made with a laterally-extending slotted arm, by which it can be clamped to the sewing-machine or elsewhere, is formed with a shield or guard and is by preference concave, as shown. A knife 16 forming part of a lever 17 projects through a slot in the guard, and is slotted in rear to receive a crank-pin 20 by which it is oscillated. The crank-pin is driven by a pulley 23 which may be rubber-shod so that it can be driven by the sewing-machine flywheel, or a separate belt may be used for driving. The seam is ripped by applying it to the knife.

FIG. 2.



798. Timewell, A. T. Jan. 11.

FIG. 12.

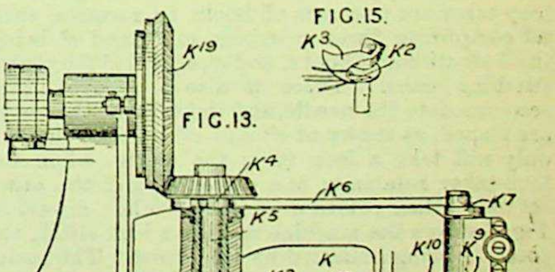


FIG. 15.

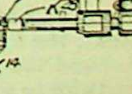
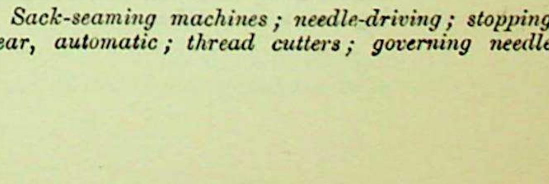


FIG. 13.



Sack-seaming machines; needle-driving; stopping gear, automatic; thread cutters; governing needle *thread.*—In a machine for filling sacks, the tops are sewn up by a chain-stitch machine K. The sack-holder and sack are drawn past the machine by a travelling chain, not shown. The needle K^2 is driven by an eccentric K^4 on the spindle K^5, rod K^6, lever K^7, K^9, and link K^{10}. The hooker K^3, shown to a larger scale in Fig. 15, is driven by gear-wheels K^{12}, K^{13}, K^{14} from the same spindle K^5. The presser-foot K^{28} on the rod K^{29} is held down by the spring K^{30}. The driving-wheel is started by a friction clutch actuated by the moving sack-holder. When the seam is finished, the clutch is released and a brake applied automatically to the back of the wheel K^{19} to arrest the machine. The thread is cut by shears L, L on sliding bars L^3, L^3, which are at first separated by the sack-holder and then forced together again by springs when the sack-holder has passed. The slack of the thread is taken by a roller L^2 actuated by ratchet mechanism from the spindle K^5.

801. **Boult, A. J.,** [*Tracy, H. R.*]. Jan. 11.

FIG. 2.

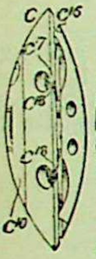


FIG. 3.

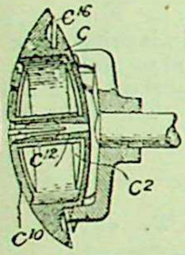
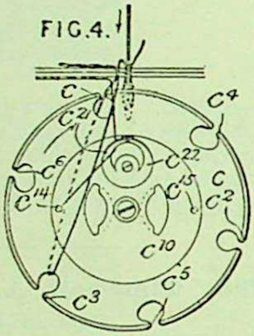


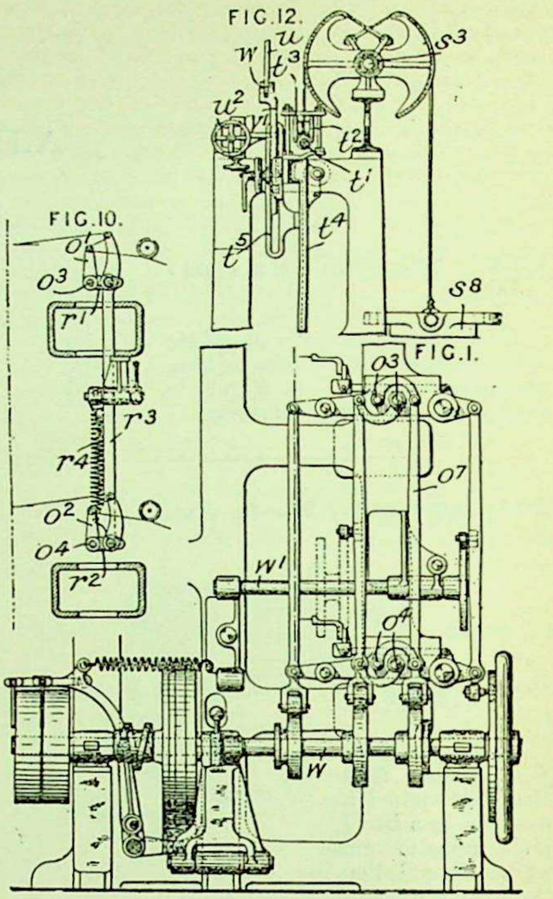
FIG. 4.



Chain-stitching in lock-stitch machines; lock-stitch hooks; governing needle thread.—The invention relates to a rotary hook machine which can be used either for lock-stitching or for chain-stitching, with or without a second thread, by reversing the motion of the loop-taker. Figs. 2, 3, and 4 show the loop-taker, which consists of a main part C carrying in a central hub a cover c^{10} held in place by a spring catch c^{12}. The bobbin C^2 is also carried by the hub. Round the edge of the loop-taker are two sets of hooks or recesses, each set comprising three members, c, c^2, and c^3 being the lock-stitching hooks, and c^4, c^5, and c^6 the chain-stitching ones. There is also a groove c^{16} to accommodate the needle, and the sides of the hooks are sloped, as shown at c^{17} and c^{18}, so that one set only will take a loop from the needle when the loop-taker rotates in one direction, and the other set only when rotation is in the other direction. Fig. 4 shows the machine making a lock stitch, the rotation being indicated by the arrow. The under thread comes out through the hole c^{14} and round the tension arm c^{21}, but, when chain-stitching with a second thread, the latter comes out through the hole c^{15} and round the opposite arm c^{22}. The loop-taker rotates twice to every three stitches, alternate hooks performing successive stitches.

1135. **Wise, W. L.,** [*Saurer, A.*]. Jan. 14.

FIG. 12. FIG. 10. FIG. 1.



Embroidery.—Relates to shuttle embroidering-machines. Fig. 1 shows a part end view of the machine. The main shaft W, carrying cams for operating the needles, tension devices, and shuttle mechanism, is arranged laterally across one end of the machine, instead of longitudinally in front thereof. Above and parallel to it is the shaft W^1 which actuates the festoon-forming mechanism. The cam-actuated shafts o^3, o^4 carry the thread-guides o^1, o^2, Fig. 10. At the ends of the shafts o^3, o^4 remote from the actuating-devices o^7 &c. are arms r^1, r^2 connected by a rod r^3 which is pressed upward by a spring r^4. By means of a pawl and segmental rack, the spring r^4 can be kept at such a tension that the turning moment which it produces in the shafts o^3, o^4 just balances the opposite moment produced in these shafts by the tension of the threads and the weight of the actuating-parts o^7 &c. Fig. 12 is a cross-section of the upper part of the machine, showing the means for supporting the embroidery frame t^1 and the pantograph. The frame t^1 carries bars t^3, which rest on rollers t^2, each of which runs on a bar t^1 supported, like the counterweights s^8, by straps hanging from arc-shaped arms on the shaft s^3. The frame t^1 is guided vertically by contact of its lower beam with vertical rods, and horizontally by fixed horizontal rods engaging in the slotted guides t^5 secured to the frame t^1. The pantograph is carried on a slide u^2 horizontally adjustable in the framing, while the pin w, connecting the arm u of the pantograph to the frame t^1, is carried by a slide v^1 vertically adjustable in the frame.

1203. **Lampe, F., Hirschler, F.,** and **Nowotry, L.** Jan. 15.

FIG 5.

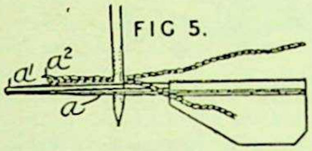
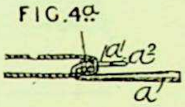


FIG.4a



Needle-threaders.—Consists of a rod, the pointed end of which is formed with an upward-directed hook a^2, the part carrying such hook being bent into a loop so as to produce two parallel arms a^1, a at a distance apart equal to the thickness of one side of the eye. In use, the hook a^1, a^2 is slid through the eye of the needle as in Fig. 4^a, and on being passed back the hook a^2 carries with it the thread, Fig. 5.

1404. **Scrivenor, M. E.** Jan. 18.

FIG.1.

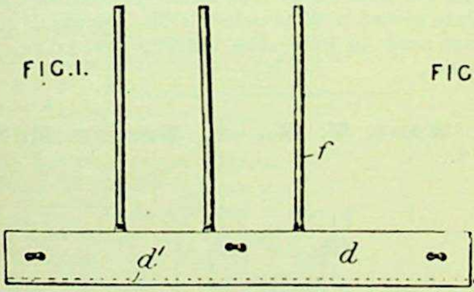


FIG.2.

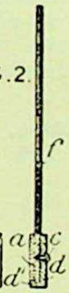


FIG.3.

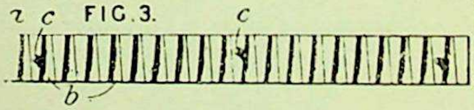
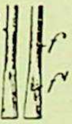


FIG.5.



Embroidery.—Relates to frames. Fingers or pegs f have tapered ends f^1 which fit in corresponding grooves in a strip a; a flanged plate d, d^1 is secured to the strip a by pins c and keyhole slots, or is hinged to a. Any particular peg can be easily removed. The pegs may have holes fitting over pins on the strip a. The frame is used for crocheting or making ornamental or fancy work.

1430. **Gerlach, A.,** [*Rehwoldt, F.*]. Jan. 18.

FIG.25.

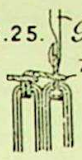


FIG.24.

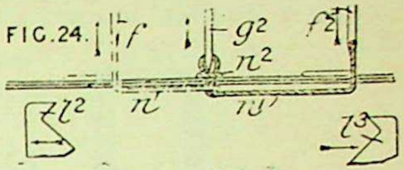


FIG.16.

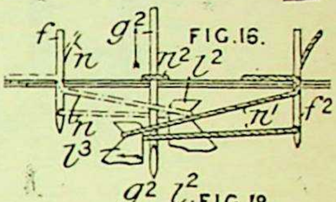


FIG.18.

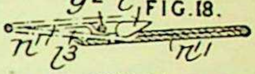
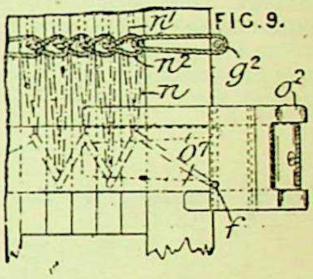


FIG.9.



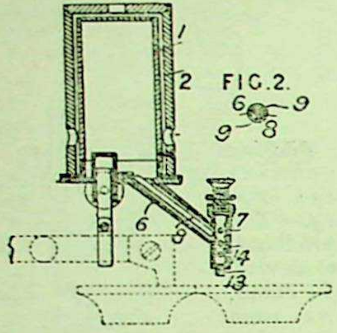
Book-stitching machines; chain-stitching; loop-stitching.—The stitch produced, though somewhat different in detail, is of the same general type as that described in Specification No. 22,955, A.D. 1897, and is produced in substantially the same machine, which, however, is so modified that both the two loopers l^2, l^3 co-operate within each section or signature to form stitches, the result being that inside each signature there are two stitches or loops n, n^1, Figs. 9 and 24, extending respectively to the right and left of the row of chain stitches n^2 at the back of the book, and passing one through the other. Figs. 16 and 18 show the relative positions of the loopers &c. at the beginning of the up-stroke of the hook g^2. The hook, as it rises, engages the loop n^1, and being turned through 180° draws the loop n^1 through the previously-formed loop n^2, Figs. 24, 25, thus completing the stitch. In a modification, the needles f, f^2 and hook g^2, unlike those above described, have no independent vertical motion, and descend and ascend simultaneously twice to each stroke of the loopers, the resulting stitch being, however, the same.

Work-supports.—To prevent slitting of the paper when sewing with tapes, the tape guides o^2, Fig. 9, are provided with extensions having slots o^7 through which the stitches are passed.

1901. **Romeyer, J.,** and **Josserand, A.** Jan. 24.

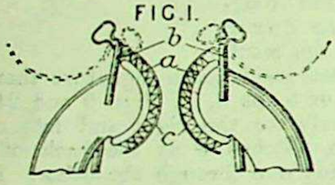
Sewing-machine dyeing-attachments; glove-sewing machines.—Relates to an attachment for applying colour to a seam, and is specially applicable to glove-sewing machines. It consists of a brush or wick 13 held in a perforated tube or piece of wire gauze 14, which can be adjustably fixed by a screw in a casing 7. The casing is connected to a colour-holding vessel 1 by a tube 6 containing an adjustable partition 8 which acts as a regulator and prevents any of the colouring-material from being splashed on to the work. The vessel 1 is enclosed in a non-conducting casing 2, and a space is left between them so that an even temperature is ensured. The bottom of the vessel is screwed on to provide for refilling. The apparatus is adjustably clamped as shown on the needle-bar of the machine, so that the colour is applied just in front of the needle. Air may be admitted to the vessel 1 by a ventilating tube or valve.

FIG.1. FIG.2.



2546. **Inslee, W. H.,** [*Singer Manufacturing Co.*]. Feb. 1.

FIG.1.



Straw-mat sewing-machines; carpet-sewing machines.—An attachment is described for the carpet-sewing machine described in Specification No. 16,460, A.D. 1894, whereby straw and other matting may be sewn without injury. Pivoted preferably to the springs *b* are smooth shields *c* which cover, when required, the toothed clamping and stretching jaws *a*, and which may be moved out of use, into the position shown by the dotted lines.

2547. **Inslee, W. H.,** [*Singer Manufacturing Co.*]. Feb. 1.

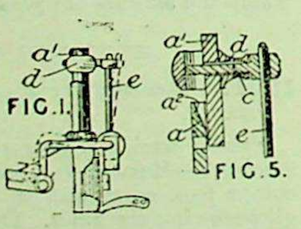


FIG.1. FIG.5.

Multiple-needle machines; needle holders; needle-driving. — An improved method is described of throwing out of operation one of the needles of a two-needle machine. The needle-bars *a*, a^1 are of half-round section, and are coupled together by a pin *c* sliding in a collar *d* secured near the top of the auxiliary bar a^1. To uncouple the bars, the arm *e*, on which slides the head of the pin *c*, is moved against a spring into the position shown in dotted lines, by means of a knee or similar lever and suitable connections. The bar a^1 is held out of action by a spring. On the pin *c* being returned to its normal position, the incline a^2 engages with it, and it snaps into the hole in the bar *a*.

2549. **Inslee, W. H.,** [*Singer Manufacturing Co.*]. Feb. 1.

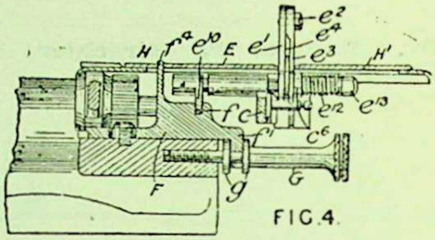
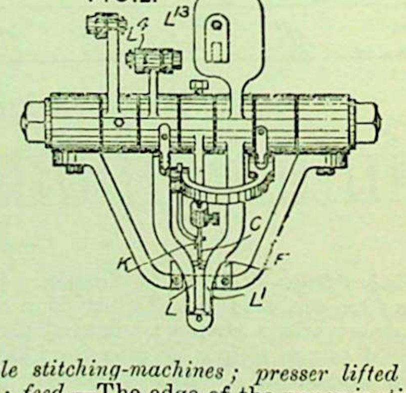


FIG.4.

Sewing-machines, trimming or cutting in.—Relates to improvements in the trimmer described in Specification No. 8133, A.D. 1897. The trimmer rock shaft E mounted in the feed-bar C has an arm e^1 to which the upper pivoted blade e^1 is secured by the guard clamp e^3 and screw e^2. The lower blade has a forked extension to embrace an adjustable hollow pin which is clamped to the feed-bar. The sliding block F has a lug f^1 which is embraced by the collars *g* of the adjusting-screw G, and in turn has a notch *f* in which the projection e^{10} of the shaft E engages, and a lug f^4 which passes through a slot in the plate H used for covering the cutter blade slot in the work-plate. In this case, a second plate H^1 is detachably secured to the plate H. When the trimmer is adjusted away from the needle, an auxiliary feed-dog carried by the arm c^6 encircling the shaft E is used to keep the slot in the work-plate closed at that point. The spring e^{12} and nut e^{13} are used to keep the cutting-device &c. in adjustment.

2884. **Hunt, T. G.,** and **Barsby, E. S.** Feb. 4.

FIG.2.



Boot-sole stitching-machines; presser lifted automatically; feed.—The edge of the upper is stitched to a feather or lip raised round the edge of the insole. Fig. 2 shows the needle end of the machine, and Fig. 5 some of the parts in side view. The work is held against the support F by two clamps L, L¹, which are both lifted after each stitch by the same cam, L through a pin connection L¹, and L¹ against a spring L¹¹ by an adjustable screw L¹³, it being thus possible to lift the clamp L¹ independently of its actuating-cam. The feed-lever M is pivoted in a swinging bracket M¹, Figs. 5 and 7, and has forward and lateral motions imparted to it by two cams. Two other cams impart lateral and vertical motions to the looper lever E¹, which is pivoted so as to allow of this. An eccentric and a cam on the main shaft actuate the curved hook needle C, and the cast-off device K, respectively.

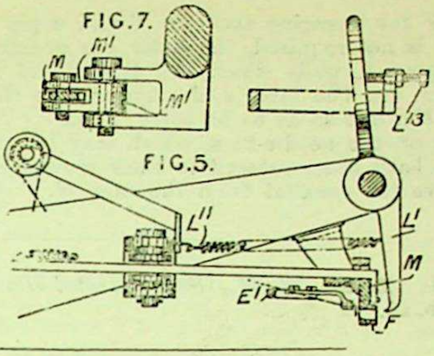


FIG. 7.

FIG. 5.

3339. Entwisle, J., [*Kursheedt Manufacturing Co*]. Feb 10.

Embroidery.—Relates to means for automatically regulating and controlling boring-apparatus from a pattern mechanism, and for embroidering the edges of buttonholes. Fig. 2 shows an end elevation. The sliding rods H, H each carry rotatable shafts F on which are mounted the sharp points *a* and the blunt points *b*, and also have arcs U provided with notches *n* and pins *l*. The rods F carry levers V which are pivoted to the double pawls W connected by the rod *d*. The rods H, H are actuated by bell cranks K, M connected by the rod *g* and having a pin engaging in the slot of the adjustable cam O which receives motion from the rod N and bell crank L actuated by a cam P on the jacquard shaft C. The bell-crank lever R is connected to the rod X, which is provided with a jaw for embracing a pin on the upper pawl W, and is also connected to the bell crank Z which has a pin *l*¹ entering a slot in the cam O. At the proper time, determined by the pattern, the lifter *a*¹ actuates mechanism not shown, the bell crank R is swung, the rod X drawn down, the upper part of the pawl W leaves the upper notch *n*, and the arms V and shafts F are rotated so that the points *b* are brought into the horizontal and operative position and the lower points of the pawls W engage in the lower notches *n*. The bell crank Z also swings the upper end of the lever N, and the bare points are brought by their mechanism into the normal position. The points *a* and *b* may be mounted in a variety of ways, of which Figs. 3 and 4 show two examples. In Fig. 3, the points *a* are carried by the bars F and the points *b* by the lever F¹. In Fig. 4, the points *a* and *b* are carried by separate bars H¹, H¹ with the one or the other of which a pin carried by the bell crank K is caused to engage. Fig. 5 shows the apparatus for festoon or buttonhole edge embroidery in the operative position, the festoon shaft E being driven from the main shaft D at a reduced speed by means of the spurwheels L, M. The shafts P are provided with elbow levers H connected by a rod S which has a

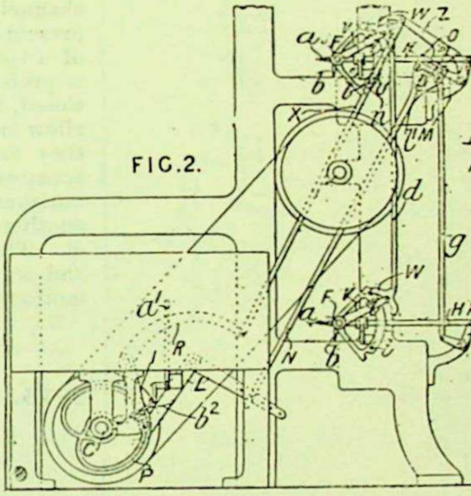


FIG. 2.

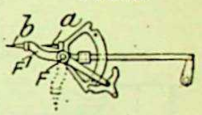


FIG. 3.

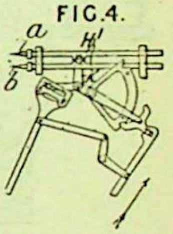


FIG. 4.

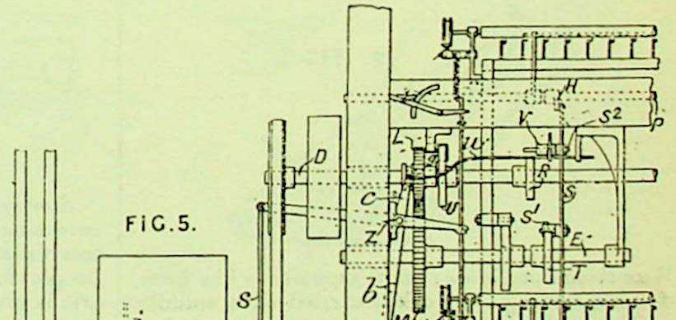


FIG. 5.

pin S^1 for engaging the cam T and a pin S^2 on which the roller v slides. When the festoon apparatus is not required, the lifter i is operated to enter the crescent n into the cam w. This rocks the lever X, pulls down the link s, and rocks the shaft Z so that the lever b operates the belt shifter V. The lever c also throws the clutch U out of gear, and the connection u shifts the roller v to the left so as to be acted upon by the fast cam R on the shaft D so that the normal movement of the needle-bars, which may be driven from the shaft P, is not interfered with. When the parts have been restored to their normal embroidering positions, the jacquard mechanism operates to remove the crescent from the cam W.

3791. Lake, H. H., [*Steam Heated Horn Co.*]. Feb. 15.

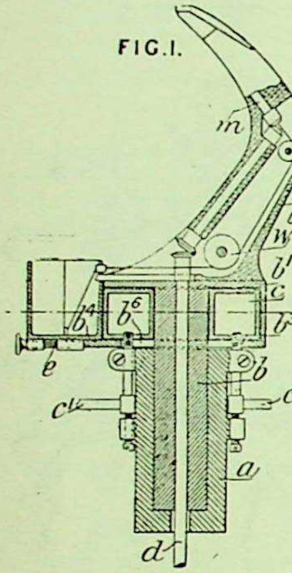


FIG.1.

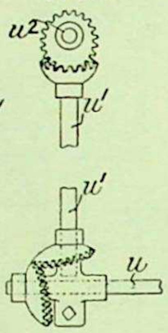


FIG.17.

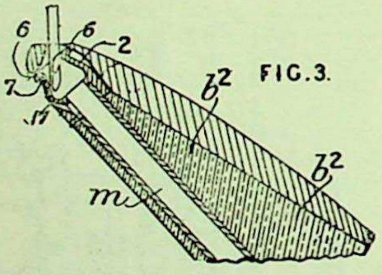


FIG.3.

Wax-thread machines; work-supports.—The horn b^2 for supporting the work is carried on a spindle b which fits in a socket a. A steam circulating chamber c is supported on adjustable supply and exhaust pipes c^1, c^1 carried by the socket a, but movable so as to bring the chamber in contact with the base b^1 of the horn if necessary. A casing b^3, secured to the base of the horn, encloses the chamber c, but is cut away at b^6 to allow clearance for the pipes c^1, c^1 as the horn revolves. It also carries a shelf b^4 for carrying the wax pot, which can be moved in relation to the heating-chamber c by a screw e. The thread passes over rollers w, w^1 to the thread presenter 2 carried in the end of the horn as shown in Fig. 3.

Needles, hook, threading-devices for.—The end piece of shafting m which carries the thread presenter is hollow, and the thread presenter fits into it or outside it, as shown. The thread presenter is preferably cup-shaped and larger at the bottom than the top, so that the portion of its side which is adjacent to the needle is approximately parallel to it. The cup 2 has a lip 6 having a hole 7 for the thread which reaches it through a groove or channel 17. Various modified forms of thread presenter are shown, some of which consist simply of a thread-carrying arm, but the cup-shaped form is preferred. When the bottom of the cup is closed, lateral openings are made at the sides to allow lasting-tacks or the like to be removed should they fall into it. The vertical shaft d which actuates the shafting in the horn is driven by a horizontal shaft u, which receives its motion from another horizontal shaft u^2 through a vertical one u^1. The bevel gearing connecting the shafts u, u^1 and u^1, u^2 is elliptical to give the required variable motion to the thread presenter.

3815. Hlavácek, W. Feb. 15.

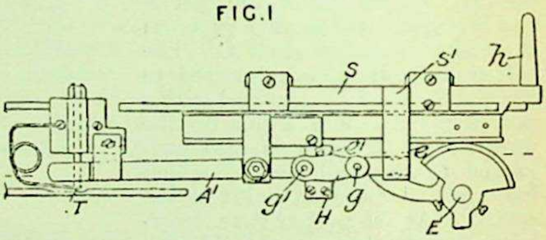
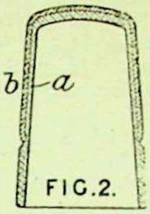


FIG.1

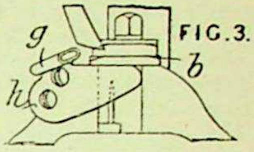
Sewing-machine feed.—Means are described for reversing the feed-mechanism of quilting-stitch machines. Fig. 1 shows the mechanism in its most simple form. The lever E actuated by an eccentric is pivoted to the reversing-lever H, which is in turn pivoted at g^1 to the lever A^1 which actuates the feeder. As shown in Fig. 1, the fulcrum of the lever H is at e, which is supported by the depending portion S^1 of the block S, so that the levers E, A^1 move as if they were in one piece. On displacing the block S to the left by means of the handle h, the point e^1 becomes the fulcrum of the lever H, and the motion of the feeder is reversed. In modifications, the parts described are placed before or behind the presser-bar T, and act on it directly or indirectly. The bar T is slotted, recessed, or has its shape slightly altered to allow for the free working of the parts.

4243. Iles, C. E. Feb. 21.



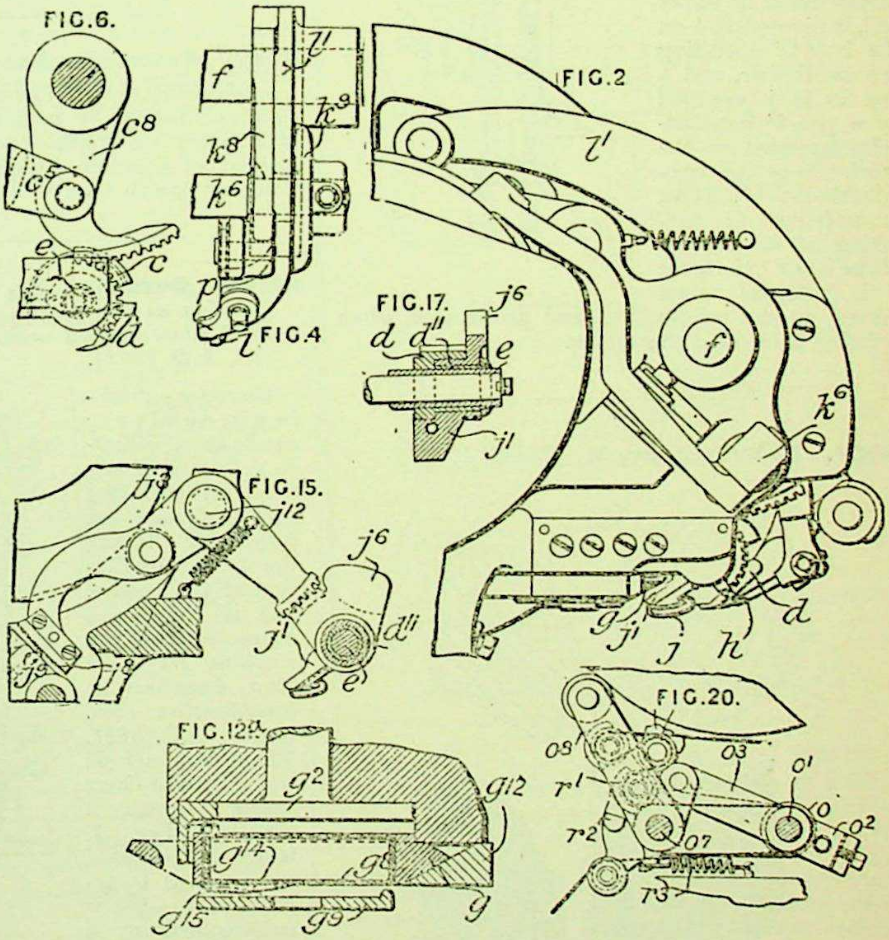
Thimbles.—A core or foundation *a* of celluloid, vulcanite, or other non-metallic substance, which may be open at the inner end, is covered by a metallic cap *b*, the edges of which are pressed into or otherwise secured to the inner part. Several modified forms are shown and described. The metal cover can be made to completely enclose the lining, the edge of one being folded over the other, or secured by a separate clip. The cover may be composed of wire gauze, and the metallic part may be completely embedded in the non-metallic part.

4735. Gadsby, W. H. Feb. 25.



Boot-sole stitching-machines; guiding materials.—In order to enable a false-welt to be sewn between the upper and the edge of the sole in a Keats' stitcher No. 7 or other boot-stitching machine, a loop or guide *g* is attached adjacent to the work-support *b* by an extension *h*, and the false-welt is pulled through the loop *g* and guided into place as the boot is traversed over the work-support.

4905. Denne, M. T. Feb. 28.



Boot-sole stitching-machines.—Relates to machines of the kind described in Specification No. 21,711, A.D. 1892, and used chiefly for welted and turnshoe work.

Feed; guiding materials.—Fig. 2 shows a part general view of the machine, and the other Figures show details. The welt-guide lever j^1, Figs. 15 and 17, is pivoted on the boss d^{11} of the laterally-movable awl-carrier *d*. A projection j^6 of the lever j^1 fits between the plates k^8, k^9, Fig. 4, of the feed-slide k^6, from which both the welt-guide and awl thus receive a lateral feed motion. The channel-guide *l*, Fig. 4, is carried on a cam-lever l^1 oscillated on the shaft *f*, and receiving also a lateral motion from the plates k^8, k^9. The welt-guide *j* is moved, so as to clear the work on the back stroke of the feed-slide, by a cam-lever j^3 pivoted at j^{12} and locked during the piercing of the work by a rack j^8 engaging a cam-controlled pawl j^9.

Needle-driving; perforating-devices.—The needle-carrier *c*, Fig. 6, pivoted on the shaft *e*, is oscillated by a toothed segment of the lever c^8, which is connected to one end of a cam-rod c^5, the other end of which is guided on the main shaft. The awl-carrier, which is also pivoted on the shaft *e*, is operated in a similar manner.

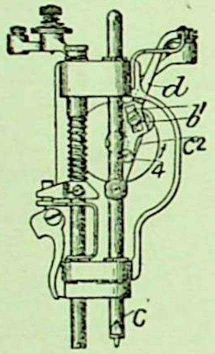
Lock-stitch shuttles and shuttle mechanism.—The shuttle *g*, Fig. 12^a, is rotated by the driver g^2, which is driven from the main shaft by helical gearing. The cop-holder g^8 is retained in the shuttle by a lever g^9 hinged to the shuttle plate g^{12} and pressed upwards against an adjustable pin by a spring. The contact-pieces g^{15} on the lever g^9 are rounded to allow the loop to pass, and one of them prevents the rotation of the cop-holder by engaging a projection g^{14} thereon.

Needles, hook, threading-devices for.—The thread hook *h*, Fig. 2, is carried on a rack rod actuated in the same way as the needle and awl carriers. The thread-guide *p*, which co-acts with the hook *h*, is carried on the channel-guide lever l^1.

Governing needle thread.—The take-up lever is made with a slot, in which the point of attachment of the link connecting it to its cam lever may be adjusted. The thread is locked in the grooved wheel *o*, Fig. 20, by a block o^2 carried on a rod o^3, which is slotted to embrace the spindle o^1, and is actuated by a cam lever o^6. The auxiliary take-up lever r^1 is pivoted on the spindle o^7 and normally held against a stop r^2 by a spring r^3.

4997. Wheeler, S. H. March 1.

FIG. I.



Sewing - machines, governing needle thread in.—In a two-thread machine, the take-up lever *d*, having a thread-eye at its upper end, is pivoted at 4 on the link C² operating the needle-bar, and a slot in it is engaged by a pin b^1 eccentrically mounted on the crank-pin which operates the link C². Thus, in addition to partaking of the motion of the link C², the lever *d* is retarded when taking up the needle loop, and accelerated when drawing thread for the needle.

5047. Friedberger, N. March 1.

FIG. I.

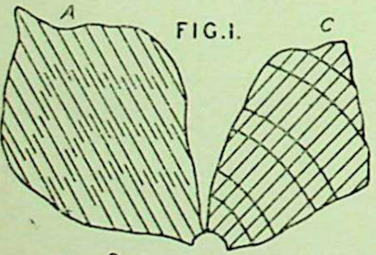
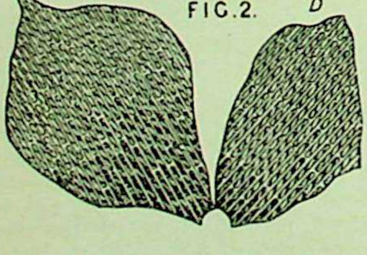


FIG. 2.



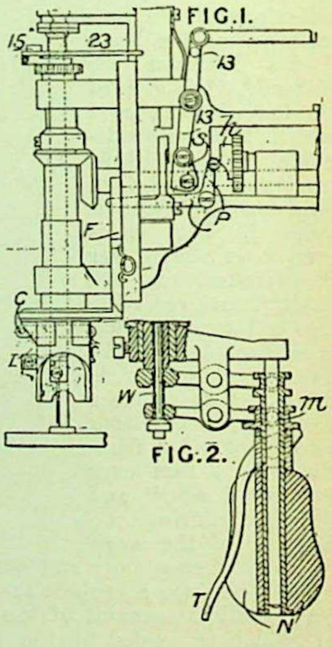
Embroidery.—In order to blend different shades of one colour or tint, patterns A or C, Fig. 1, are used. In the pattern A stitches are formed on the lines shown and between them, while in the pattern C the continuous transverse lines indicate the spot at which the stitch is to be made both on the longitudinal lines and between them. In Fig. 2, B and D represent shaded embroidery corresponding to the patterns A and C respectively.

5237. Aston. [*née* Faure,] **K. J. M.** March 3.

Embroidery.—Floral designs are produced on net or other fabric by making stems, leaves, &c. in embroidery or crewel-work, and attaching petals formed of another suitably-coloured fabric, by stitching or adhesively.

5458. Cornely, E., and **Cornely, R.,** [*trading as* Cornely et fils, E.]. Oct. 2, A.D. 1897, [*date claimed under Sec. 103 of Patents &c. Act, A.D. 1883*].

FIG. I. FIG. 2.



Overedge - stitching machines; needle-bars, vibrating laterally; embroidery, machines for. Consists of means for varying the lateral oscillation of the needle, and is shown in connection with a machine of the kind described in Specification No. 10,688, A.D. 1891. The lower end of the needle-bar passes through a slide C, Fig. 1, which is oscillated by a wedge I carried on a slide F reciprocated by a crank lever P which is actuated by the cam *h*. The motion of the lever P towards the cam *h*, and consequently the oscillation of the needle-bar, is limited according to the position of the cam S. The crank handle of the stop motion of the kind described in Specification No. 212, A.D. 1876, is provided with a lever T, Fig. 2, which on being drawn inward raises the sleeve *m*, and depresses the rod W which passes through the sleeve adapted to operate the stop-motion on the depression of the handle N. The rod W is operatively connected to the lever 13 and cam S, the position of which cam is thus controlled by the movements of the lever T. For automatically varying the oscillation of the needle-bar, the lever 13 is operated by a rod 23 from a crank-pin 15. A slight modification of the lever T is described. In another modification, the handle N controls the cam S, while the stop-motion is controlled by a separate device.

5542. Eiselt, W. March 7. *Drawings to Specification.*

Lock-stitch hook sewing-machines.—The invention consists in applying to rotary hook machines the mode of winding thread cops described in Specification No. 22,935, A.D. 1897, in relation to shuttle machines. The thread is wound so as to form a disc without any bobbin or central spindle, and the cop so formed is introduced without any covering into the thread case. The thread is preferably withdrawn from the centre of the cop, but it may be unwound from its outside.

5587. Hewitt, P. H., Cockle, E. A., and **Matthews, C.** March 7.

FIG.2.

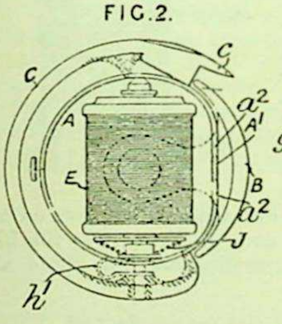


FIG.3.

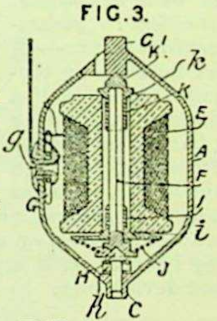
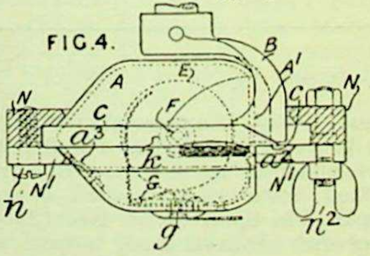


FIG.4.



Lock-stitch hook sewing-machines.—The invention consists in enabling ordinary reels of cotton to be used in rotary-reciprocating shuttles. The shuttle A is shown in cross-section in Fig. 3, and is nearly circular in elevation, as shown in Fig. 2, being flattened at A¹, where the driver B fits against it. It is guided by a flange C which runs in a circular race N, as shown in Fig. 3, and has a hook *c* for engaging with the needle-thread loop. Its front face is secured by catches a^2, a^3, and can be removed to obtain access to the reel E, which is carried between cones *i*, *k* on sleeves I, K fitting on a square spindle F. A mode of mounting this spindle is shown, consisting of centres K¹ and H, the latter of which is pressed upwards by a spring h^1. The former centre is part of the sleeve K, and the sleeve I is acted on by a spring J. The thread passes under a tension spring G, and out through a central hole *g* in the shuttle. The front part N¹ of the race N is pivoted at *n*, so that the shuttle can be removed, and is fastened by a fly nut n^2.

5588. Hewitt, P. H., Cockle, E. A., and **Matthews, C.** March 7.

FIG.2.

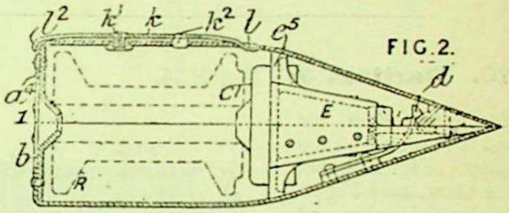


FIG.1.

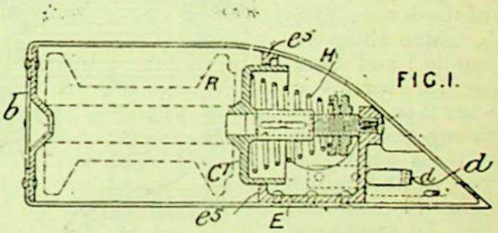
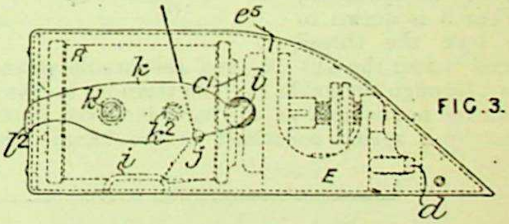


FIG.3.

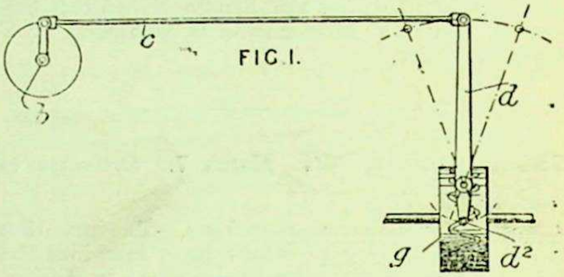


Lock-stitch shuttle sewing-machines.—The invention relates to shuttles adapted to receive reels of cotton. The shuttle is divided longitudinally along the line 1–1, Fig. 2, and is approximately circular in section, but is slightly flattened to bear against the race. The centres on which the reel R is carried are formed respectively on a plate *b* attached to the lower half of the shuttle, and on a bell-shaped piece C¹ which is pressed against the reel by an adjustable spring H, but is prevented from rotating. The piece C¹, the spring H, and other parts relating thereto are carried in a kind of headstock E, one of the ends of which forms a ring c^5 through which the piece C^1 slides, thus preventing the thread from getting entangled in the spring. The two halves of the shuttle are held together by studs on the plate *b* engaging with holes in a flange a^4 on the upper half, and by a spring catch *d*. The parts may be hinged together instead of being secured by studs. The thread passes from the reel round a guide *i*, thence out of the shuttle through a hole *j*, and under a tension spring *k*, which is adjustably attached to the shuttle by a screw k^1. The thread lies between two stops, one formed by a stud k^2 in the spring, and the other by its turned-in end *l*. The tail of the spring is curved as shown at l^2 to avoid entanglement with the thread. The shuttle-driving mechanism is of an ordinary character.

5702. Nadel, D., and **Herzberg, H.** March 8.

Sewing-machines, braiding in; feed.—The invention consists of means for mechanically actuating the feed-mechanism which is usually operated by a handle in braiding and like machines. The spindle *b*, which actuates the ring surrounding the needle, is operated by a rod *c* connected to a lever *d*. The opposite end of this lever has a pin d^2 working in a groove in a cam-wheel *g*. Different cam-wheels are of course required for different patterns.

FIG. 1.



6170. Darling, J. March 14.

Needle-threaders for sewing-machine needles. Fig. 1 shows a side view, and Fig. 5 an enlarged plan of part of the device. The rod 5, which slides in the handle 1 and has a knob 18, carries a cross-bar 3 one end of which engages a spring 11 bent as at *a* and carrying at its free end a guide 14 for the needle. In operation, the bar 3 is drawn to the left, the thread placed across the slit 16, and the needle passed down through the guide 14. The threader is drawn down the needle, and as the bar 3 is moved to the right by a spring contained in the handle, the thread-hook 10 carried by the lever 8 penetrates the needle eye; the bar 3 next engaging the bend *a* depresses the guide 14 so that the thread engages the thread-hook, which draws the thread through the needle on the further motion of the bar 3.

FIG. 5.

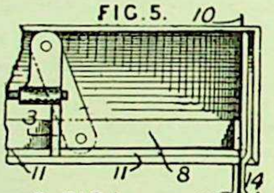
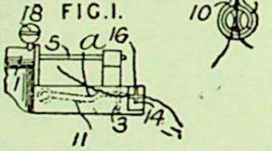


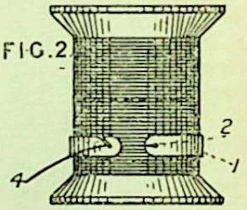
FIG. 1.



6233. Fogg, C. F. March 14.

Sewing-machine spool, bobbin, and cop holders; thread cutters; thread-end holders; governing needle thread. — A thread holding or tensioning device and a thread cutter, consisting of a band 1 having an eye 2 at one end through which the thread passes and a slit 4 at the other end which serves as a cutter, is used with a spool or coil of thread or the like. It may be used with a sewing-machine spool as a tension device only.

FIG. 2.



6281. Inslee, W. H., [*Singer Manufacturing Co.*]. March 15.

Straw-casing sewing-machines; multiple-needle machines; feed.—These machines are intended for sewing bottle covers. The straw is placed on a shoot H underneath a bar J and properly levelled. A hinged support h^2 allows the shoot H a slight accommodating movement. By pressure on the bar, the underside of which is serrated, the straw is fed down to a toothed drum D, which is revolved on the arm A^2 of the framing by means described in Specification No. 12,730, A.D. 1895. Here it is sewn by two or more needles *c* co-operating with chain-stitching loopers within the arm A^2 driven by the main shaft B.

Work-supports; thread-end holders.—Surrounding the drum D is a work-supporting framing consisting of two bent bars *i* connected by horizontal ones i^1, i^2, the latter of which is attached to the framing at i^4. The work-support keeps the sewn part of the cover in contact with the feed-drum and forms it into a cylinder. The bar i^1 has a hole i^8 to allow the bar J to pass, and the movement of the latter is arrested at the proper moment by a stop j^1 coming in contact with the former. The bar i^1 is provided with slots for holding the free ends of the threads when commencing to sew.

FIG.1.

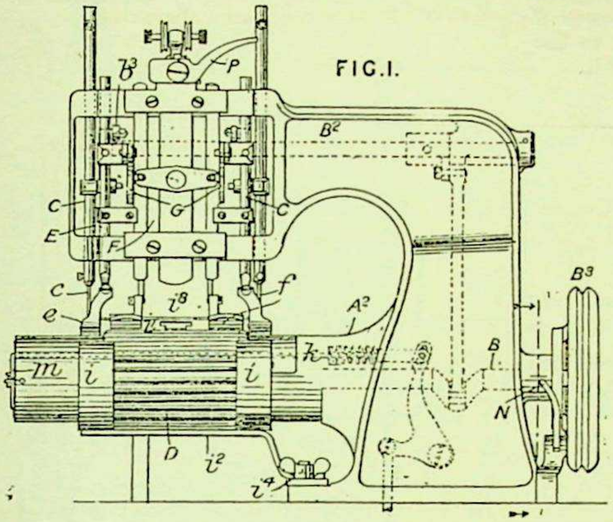
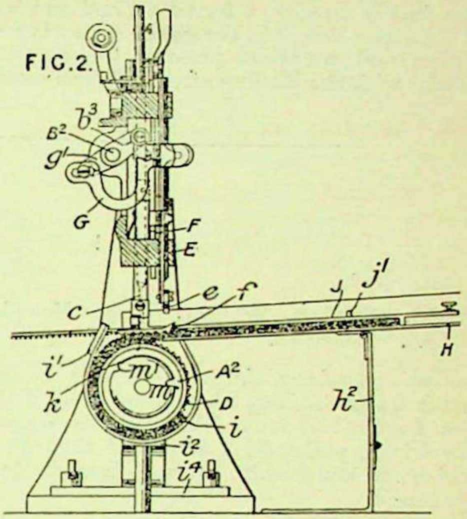


FIG.2.



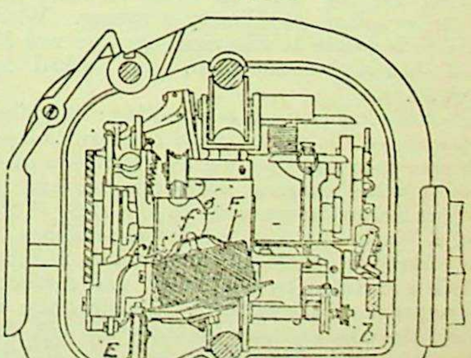
Needle-driving; presser-feet.—The needle-bars C are operated by arms b^3 on a rock shaft B^2, and corresponding to each needle are two preferably serrated presser-feet e, f mounted on bars E, F, which are alternately raised. Each pair of bars is actuated by one lever G, which is pivoted to both and actuated by an arm g^1 on the rock shaft, so that each pivot alternately forms the fulcrum for the lever. The presser-feet e act while the needles are in the work, and as the others act during the feeding motion, their actuating-bars are hinged to enable them to follow the work. The feet can be lifted by a lever P.

Thread cutters; stopping-gear.—At the end of the operation, the threads are cut by knives carried by a treadle-actuated rod k. The loopers being right or left handed, one knife is arranged to cut its thread during the forward stroke, while the other knife operates on the return stroke. To prevent the knives from interfering with the loopers, the main shaft B has an end disc m, which is notched at m^1. The rod k can only be moved when the notch is opposite to it, and this is arranged to occur when the loopers are out of the way of the knives. A spring-actuated stopping-lever N is caused to register with a hole in the hub of the driving-wheel B^3, so that the machine can be stopped in the proper position to enable the knives to be actuated.

6282. Inslee, W. H., [*Singer Manufacturing Co.*]. March 15.

Carpet-sewing machines; binding edges; folding-attachments; guiding materials.—The invention relates to holding and sewing apparatus for carpets, more especially pile carpets, described in Specifications No. 16,460, A.D. 1894, and No. 20,365, A.D. 1895. The machine used is the travelling one previously described, in which the carpet is held in clamps d, d^1. The braid for binding is held on a reel F, and is guided and tensioned by a plate f^1 to which pressure is applied by a spring f^2. From this reel the braid is fed to the compartment e^1 of a guide E, the other compartment e of which receives the edge of the carpet. The part e^3 of the guide is interchangeable to accommodate different widths of braid. The braid is thus applied to the pile side of the carpet, and the two are sewn together with their edges flush.

FIG.1.



The braid is then folded over by another device shown in Fig. 8, so that its free edge lies against the back of the carpet. Here it is acted on by a reciprocating stretcher G, which takes the place of the reciprocating piler described in Specification No. 16,460 already referred to, and which reaches it through a hole e^9 in the guide. Another form of guide is shown which presents the carpet to the needle with the binding already folded over it.

FIG. 3.

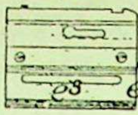


FIG. 4.

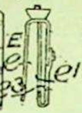
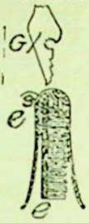


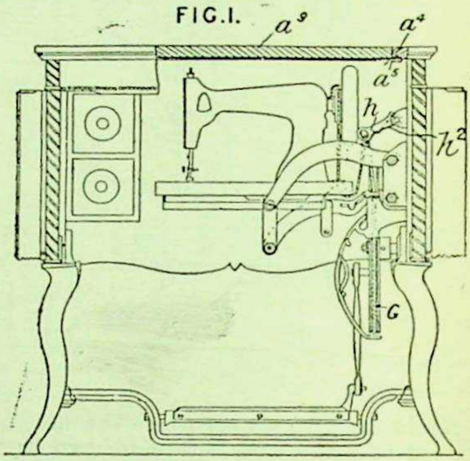
FIG. 8



6283. Inslee, W. H., [*Singer Manufacturing Co.*]. March 15.

Sewing-machines, driving.—Relates to machines lowered into cabinets when out of use. To prevent the driving-belt from becoming disengaged from the driving-pulley G, it is passed through arms h which are continually pressed upwards by coiled springs h^2.

FIG. 1.



6314. Brookes, A. G., [*Reece Button Hole Machine Co.*]. March 15.

Buttonhole-sewing machines.—Fig. 1 shows a side elevation, Fig. 4 a part plan, and Fig. 17 an elevation of the driving end of the machine. The main needle a^2 operates alone at the beginning and end of the stitching to make the bar, and in unison with the secondary needle b^1 to do the overedge stitching. The whole of the stitching is completed during one traverse of the work in the direction of the buttonhole slit. The main needle-bar a has sliding in it the secondary needle-bar b. The two are coupled by the pin 21, Fig. 2, of a block 22 carried in the slide 25 which is normally held in the coupling position by a spring. When the slide 25 is moved to the right by the rod h^1, the needle-bar b is uncoupled, and locked by the pawl 30.

FIG. 4.

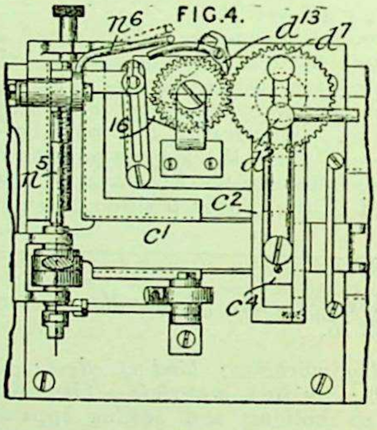
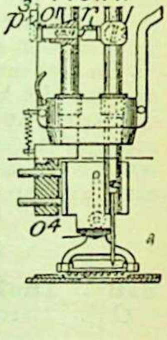


FIG. 14.



Buttonholes, barring and cutting; stopping-gear, automatic.—The work is held between clamps connected to a block c^4 carried in a slide c^2, Figs. 1 and 4, forming part of the slide c^1 which is moved to and fro by the lower end of a lever m^4, the upper end of which receives a uniform movement. The fulcrum m^8 of the lever is vertically adjustable to give a short movement to the slide c^1 for the overedge stitching when both needles are in action, and a longer one for the barring-stitches when only the needle a^2 is in action. For the spacing of the overedge stitching, the block c^4 receives a motion in the slide c^2 from a pin d^2 on the wheel d^7, which is rotated by a pawl d^{13} and ratchet gearing from the toothed sector 16 oscillated by the movements of the slide c^1. To start the machine, the rod w^2, Fig. 17, is depressed by a pedal rod, and locked in position by the catch w^{10}, thus holding the lever u^{12} to which it is connected so that the catch u^{10} is disengaged from the clutch lever u^8, and the clutch, which is similar to that described in Specification No. 22,856, A.D. 1892, is thrown into action. As the wheel e^{13} rotates, a cam-groove therein at first holds the rock shaft e^5 so that the fulcrum m^8 to which it is connected is in its raised position for the formation of the bar at the beginning of the buttonhole. The fulcrum m^8 is then depressed, at the same time, by links g, g^6, &c., moving the bar h^1 to the left to permit the needles to be coupled for the overedge stitching. A lever n^5, n^6, Fig. 4, is also moved so as to allow the pawl d^{13} to come into action, thus starting the traverse of the block c^4. Just before the completion of the overedge stitching, the fulcrum m^8 is partly raised. The finger p connected with it lifts one end of the lever p^3, the other end of which thus moves the dog o^1, Fig. 14, so that at the next descent of the needle-bar a projection r thereon engages the dog o^1 and depresses the cutter o^4. The cutter slides in a slot between the two needle-bars, and is supported so as to partake of the traversing motion of the work-holder. The slit having been cut, the fulcrum m^8 is raised still further, the lever p^3 is thrown off the finger p into the position shown, where it is out of engagement with the dog o^1, and the needles are uncoupled by the further motion of the rod h^1, for the formation of the terminal bar. The cam-groove in the wheel e^{12} may also be formed so that the slit is cut before the sides of the buttonhole are stitched. On the completion of the bar, a projection w^{12} on the wheel e^{12} disengages the rod w^2 from the catch w^{10}, thus throwing the projection u^{10} into the path of the clutch lever u^8 and stopping the machine in the correct position for making the next buttonhole.

FIG.17.

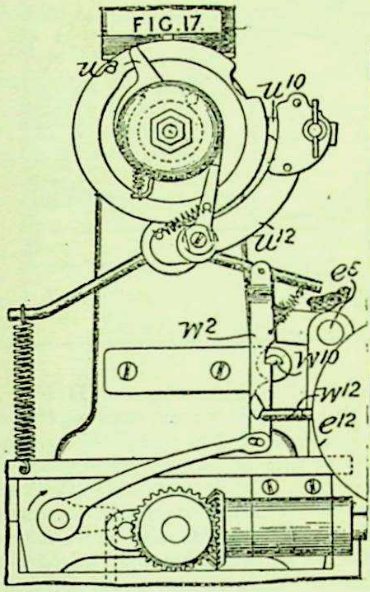
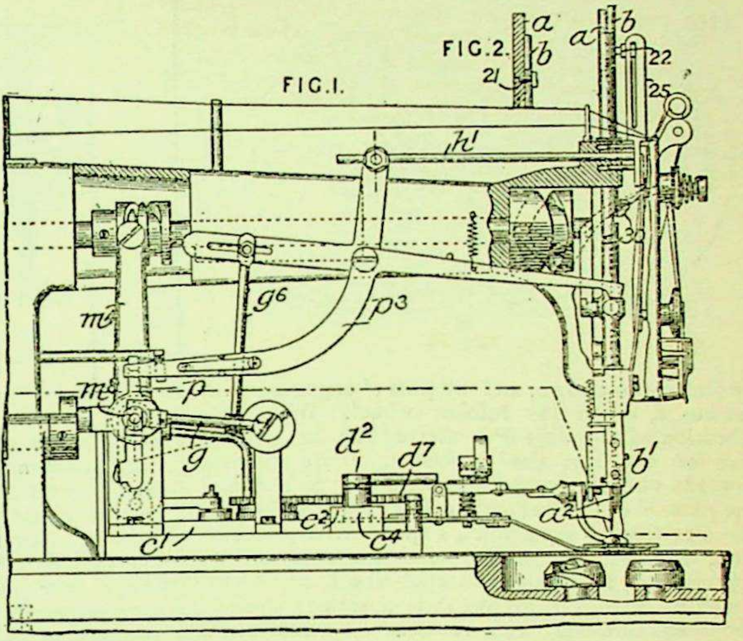


FIG.1. FIG.2.



6371. Lea, H. March 15. *Drawings to Specification.*

Sewing-machines, driving.—In an electric driving-apparatus for sewing-machines, the motor is secured to its base by means of screws passing through a slotted plate so that its position relatively to the machine may be adjusted for the purpose of tightening the driving-cord. The driving-apparatus is attached to the machine by means of metallic tongues on the base of one fitting into mortises or sockets in the base of the other.

7015. Wise, W. L., [*Fabrik für Spezial Nähmaschinen Aktiengesellschaft* (*Patente Julius Gutmann*)]. March 22.

Buttonhole-sewing machines; buttonholes, barring.—Relates to machines for producing buttonholes with bars having stitches parallel with the buttonhole slit, and consists chiefly in allowing the cam which effects the feed during the edge stitching to share, during the barring operation, the necessary

FIG.4.

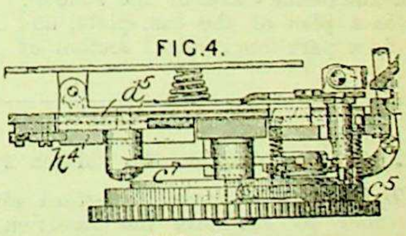
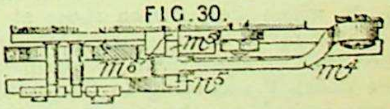


FIG.30.



longitudinal vibration of the work clamp. Figs. 4 and 6 show the invention applied to a Gutmann machine. The plate c^7, having the groove c^8 from which the feed-motion is imparted to the slide d^5 while the needle-bar is vibrated laterally for the edge stitching, is connected to the ratchet-wheel c^5 by slides, not shown, and by pins c^4 engaging with catches c, c^1 on the ratchet-wheel. When the vibration of the slide d^5 is started for the production of the bar, the catches c, c^1 are pressed inwards out of engagement with the pins c^4, and the plate c^7 can therefore move with the slide d^5 in the direction of the arrows, Fig. 6. In a modification, Fig. 11, the catches c, c^1 are replaced by springs i, i^1, and in the ratchet-wheel, and corresponding with the groove i^8, is a similar groove, provided, however, with recesses i^{5x} which allow of the to-and-fro movements of the plate i^7 during barring. In both the above cases, the transverse feed during barring is effected by the engagement of the recesses c^{11} or i^{11} with the pin h on the lower slide h^4. In another modification, the cam-groove c^8 is formed in the ratchet-wheel, the to-and-fro movements, during barring, of the cam-pin attached to the slide d^5 being provided for solely by recesses similar to i^{5x}, Fig. 11. The pin h is connected by a slotted lever to the slide h^4, the travel of which can thus be varied. The Provisional Specification describes a modification of the linkage connecting the groove c^8 with the slide d^5, which is stated to minimize the curvature of the bar due to the travel of the slide h^4. Fig. 20, which is a plan of the base-plate, and Fig. 30, which is a part longitudinal section of Fig. 20, show the invention applied to a Wheeler & Wilson machine. The slide P, which moves transversely to the axis and supports the work with the button slit in the same direction, receives its feed motion during the edge stitching from a cam connected with its ratchet-wheel in a manner similar to that described in connection with Fig. 6. During the edge stitching, the slide S, which carries the slide P, is vibrated, instead of the needle-bar, from a cam lever m^1 by a rod m^4, a pin m^5 on which is held by a spring in a slot m^6 in a bar attached to the slide S. On the completion of the edge stitching, a cam projection l^o moves the lever l, which, by a connection not shown, puts the rod m^4 out of connection with the slide S, and into connection, by means of a pin n^5, with a crank lever attached by a pin n^8 to the plate r, Fig. 20. At the same time, a projection corresponding to l^o on the opposite side of the wheel operates a pawl which turns the spring shaft r^5, allowing the spring lever r^1 to depress a pin attached to it through the plate r into a slot in one of the plates q^4, q^5 adjustably secured to the slide P. Simultaneously with the vibration of the slide P thus produced, the slide S is given the necessary feed motion by a screw t^6 connected therewith engaging a cam projection t. In a modification of the form last described, the cam-groove which effects the edge-stitch feed has recesses similar to those described in connection with Fig. 11. The mode of operating the lever r^1 is also simplified by the omission of the shaft r^5.

FIG. 11.

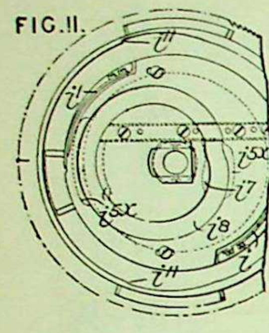


FIG. 6

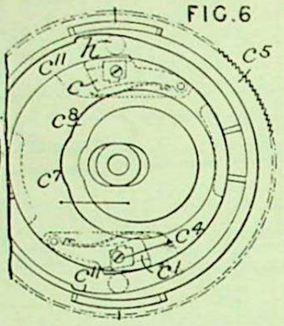
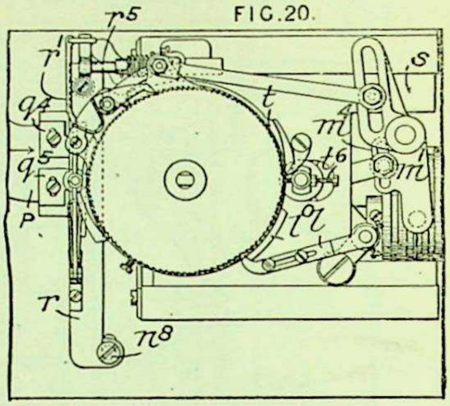


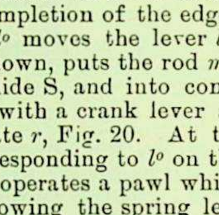
FIG. 20.



7148. Reynolds, H. W. March 24.

Multiple-needle machines; lock-stitch shuttle sewing-machines.—In order to facilitate the insertion or removal of the shuttles B which lie between those at the ends of the race in an oscillating or rotary shuttle machine, the shuttle race is formed with an opening in its periphery, provided with one or more doors F according to the number of shuttles. The doors are locked in the closed position by a set-screw or otherwise.

FIG. 3.



7338. Entwisle, J., [*Kursheedt Manufacturing Co.*]. March 26.

Embroidery.—The invention relates to a machine for punching jacquard cards. The pattern is mounted on a board a^2 which can be fixed in any desired position, and in front of this board are two vertically-movable frames B, B^1 each having a diagonal bar b^5, b^6. The bars cross at right-angles, and carry a heavy block provided with a sight which is moved to any part of the pattern by the act of moving the frames. This movement is effected by cords c^3 which operate separate wheels c^1. The movement of one of the wheels c^1 is transmitted to a pin-wheel e^1 the shaft d^3 of which operates a countershaft d^{18}, which drives another pin-wheel e^2. A Geneva stop device is interposed between these shafts, the shaft d^{18} making one quarter revolution to one of the shaft d^3. The other wheel c^1 in like manner operates pin-wheels e^4 and e^3. The wheels c^1 can be disconnected from the pin-wheel operating-mechanism to enable the pattern to be set in any required position, while the pin-wheels are automatically disconnected and set to zero after each complete operation of the punches When the pin-wheels have been set by the act of moving the frames B, B^1, a clutch is operated so as to bring into action those punches which the

FIG. 1.

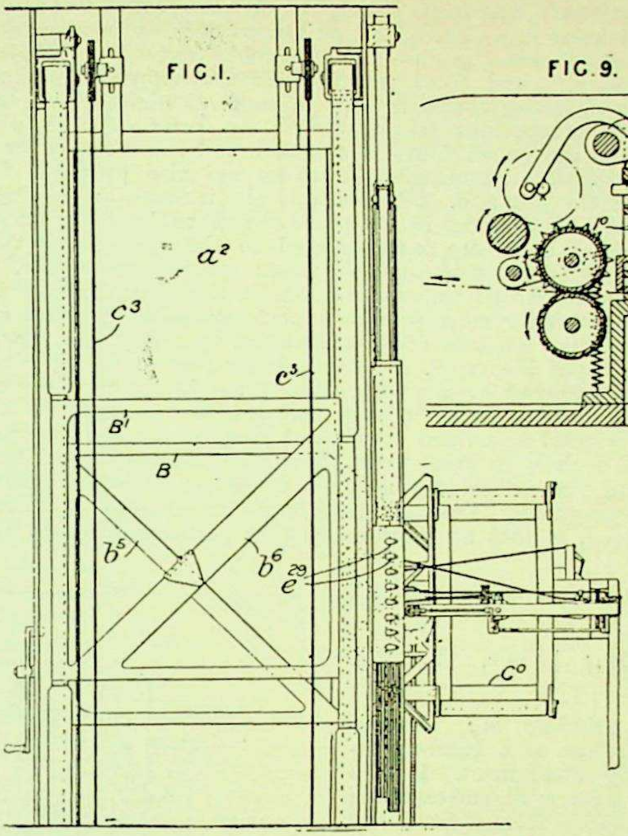


FIG. 9.

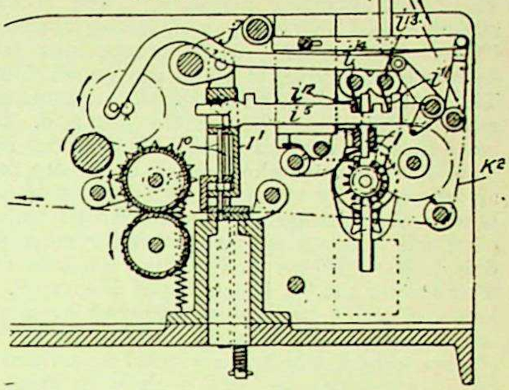


FIG. 40.

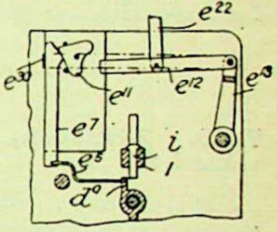


FIG. 8

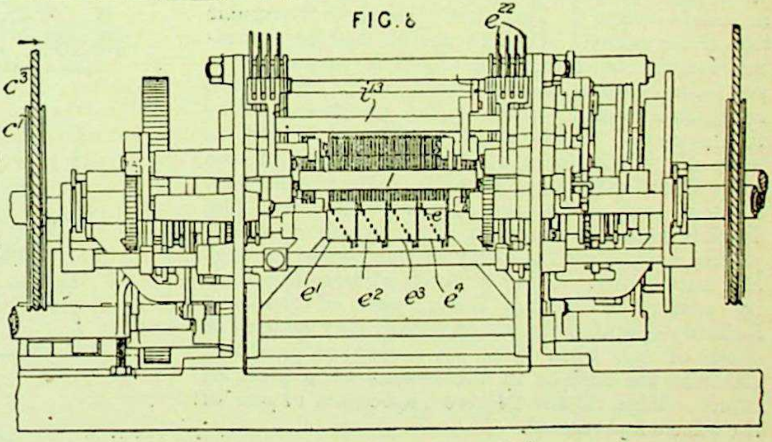
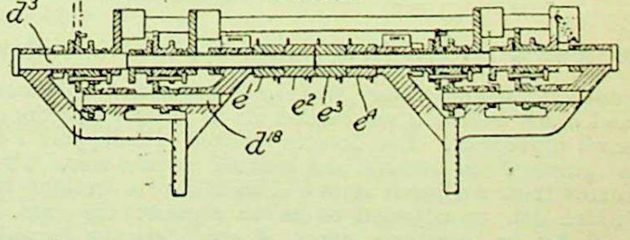


FIG. 16.



pin-wheels select. The punches are shown at I^0, Fig. 9, and are arranged in two rows in a frame I^1 operated from a cam by an arm j^7. This frame is moved twice at each setting of the punches, the paper being moved between each operation through a distance equal to that between the rows, so that all the punches make holes in a line. The object of this is to save space. The selecting-device consists of a number of pins i mounted in a movable frame I and supporting sliding bolts i^5. The frame I drops periodically, and those pins i which are supported by pins in the pin-wheels remain raised and support their corresponding bolts in reach of plates i^{11}, i^{12} on cam-actuated shafts i^{13}, i^{14}. These shafts, when turned, thus move forward the bolts selected, so as to engage with corresponding punches when the punch frame is operated, and cause the paper K^2 to be perforated. The clutch is then automatically disconnected. Punches are also provided for making holes for moving the paper when in the jacquard. The machine also includes an embroidery device C^0 which reproduces on a smaller scale the pattern in the board a^2 and enables the operator to check the work. The movements of the frames B, B^1 are communicated to the fabric, and the remaining motions are produced by a gearing from the main shaft. Various special movements, such as operation of bore points, change of tension, and so on, are produced in the control apparatus by handles e^{29} each of which selects a special punch for correspondingly perforating the jacquard card. The device for doing this is shown in Fig. 40. An arm e^{13} is reciprocated by a cam, and carries rods e^{12} and e^{30}. The former act on heart-shaped blocks e^{11}, while the latter restore to their normal positions those levers e^7 which have been disturbed by the movement of the blocks e^{11}. The position of any rod e^{12} is determined by the corresponding handle e^{29} with which it is connected by a rod e^{22}. The levers e^7 have pins e^5 which are carried in a fixed bearing d^0, and are pushed forward in the way of the punch selecting-pins i and withdrawn from them, as will be obvious from Fig. 40. The needle and the bore point or points of the embroidery machine being on different levels, means are provided for shifting the work accordingly without disturbing the general operation of the apparatus. Locking-devices are provided, so that no operation can be performed before its proper time.

7440. Birkbeck, H., [*Elger, W. D.*]. March 28.

Sewing-machines, blind stitching in; overedge stitching.—The invention relates to a blind-stitching and overedge-stitching attachment. F is a presser-foot adjustable by a screw F^1, and engaging with pins projecting upwards from a fixed but adjustable plate C. The plate C carries a triangular cam P the corners of which are slotted to accommodate the needle a, and which is turned by a pawl and ratchet device through one sixth of a revolution at each stroke of the needle-bar. For this purpose the last-mentioned engages with a lever H which is pivoted to a standard on the plate C and actuates an arm N. The presser-foot F is cut away at J to accommodate the cam. The work is folded as shown in Figs. 6 and 8, and is pushed aside out of the way of the needle at each alternate stitch. Other kinds of stitches are made by cutting away the lower part of the cam. Suitably-operated fingers or pincers may be used in place of the cam. The seam may be produced either at the edge or in the middle of a piece of fabric. Figs. 23 and 24 give a specimen of one of the stitches produced.

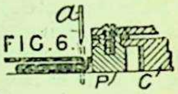


FIG. 6.

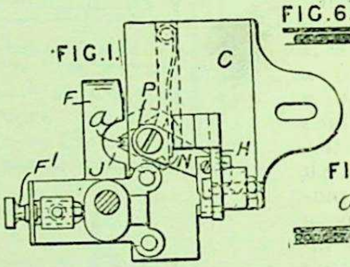


FIG. 1.

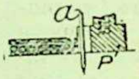


FIG. 8.

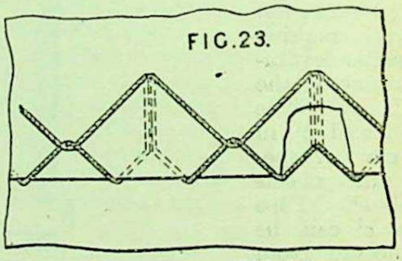


FIG. 23.

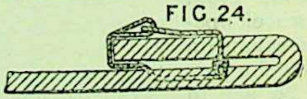
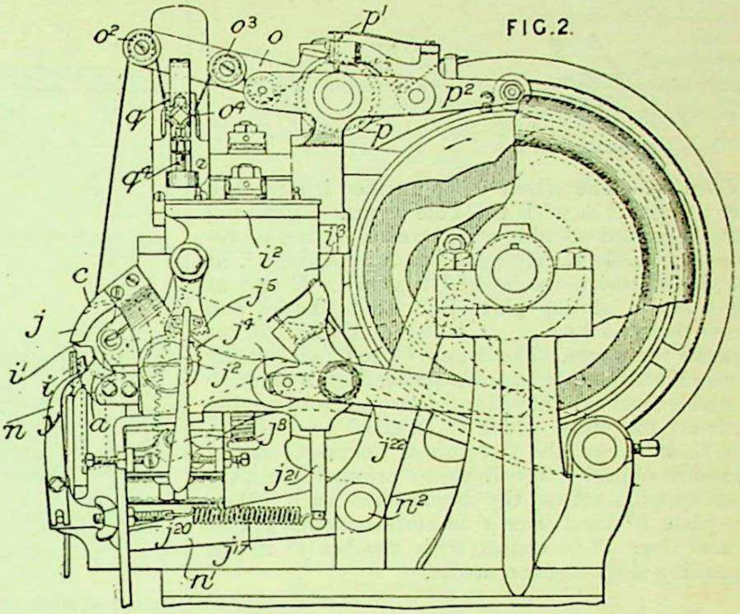


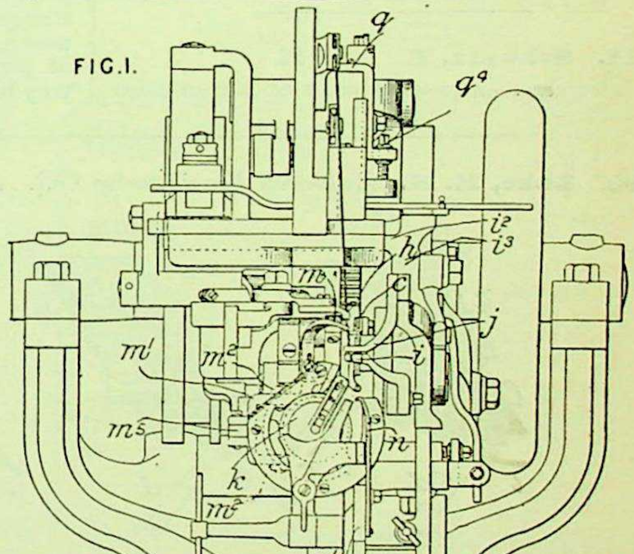
FIG. 24.

7956. Lake, H. H., [*International Eppler Welt Machinery Co.*]. April 2.

Boot-sole stitching-machines; feed; work-supports.—This machine is for attaching outer soles to welts. The awl c and needle a are carried on a shaft e and are actuated in any ordinary way, but have no lateral movement. The feed is effected by a support i and a presser-foot j, the former of which has a guide i^1 to receive the channel in the sole. They are mounted on a flange i^3 projecting downwards from a slide i^2 moved sideways in a straight line by a cam by means of a lever and link which can be adjusted so as to regulate the feed. The presser-foot j is pivoted to the flange i^3 by an eccentric pivot j^2 which can be turned by a handle i^8 and gears j^4 and j^5

for adjustment. It is raised and lowered, so as to release the work when the awl has penetrated, by a cam-actuated lever j^{22}. A spring j^{17}, attached to an arm j^{21} on the flange i^3, and connected to it by an arm j^{20}, tends to keep it in contact with the work.

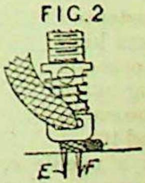




Needles, hook, threading-devices for.—A looper h and a finger m are used to apply the thread to the needle in such a way that the latter is almost completely encircled by the former. The looper is operated in any ordinary way, while the finger is carried on a yoke m^1 pivoted on fixed lugs m^2, m^2 and oscillated by a rod m^5. The finger moves first across the path of the needle, and is followed by the looper, and they return to their initial positions in the same order.

Lock-stitch shuttles and shuttle mechanism.—The shuttle k works perpendicularly to the needle and awl, and is driven by bevel gearing from a cam. The needle thread loop is opened for its reception by a finger n carried by a lever n^1 pivoted at n^2 the point of which moves along the line y across the path of the point of the shuttle but not so as to intersect it.

Governing needle thread.—The stitch is set by a take-up arm o operated from the main shaft and provided with thread pulleys o^2 and o^3 between which is another pulley o^4 sliding in a fixed guide and urged downwards by a spring. The thread also passes over a tension pulley p, which is locked just before the stitch is set by a spring pawl p^1 on an arm p^2. As the arm o rises it carries the pulley o^4 with it until the latter is arrested by a stop q. The lever o continues its motion and sets the stitch. The moment when this operation takes place is then determined by the position of the stop q, which can be adjusted by a screw q^4.



8005. Cornely, E., and **Cornely, R.** April 4.

Sewing-machines, braiding in ; embroidery.—Braid, or other flat strip of material, is stitched through its edges to the fabric by two needles E, F of a sewing or embroidering machine, so that rising of the edges is prevented.

9205. Evans, C. H. April 21.

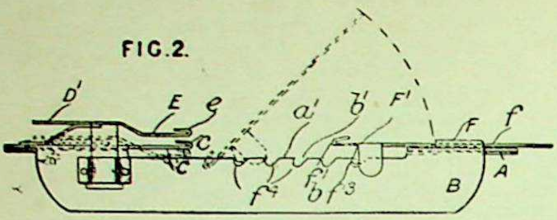


FIG.2.

Darning.—The article to be mended is stretched over a support A with the hole or rent registering with its central opening a^1. Over this fits a corresponding saddle B, having a central opening b^1, at one side of which are hooked fingers C, E and at the other a sliding plate F^1 with hooks f^1, and across these hooks c, e, f^1 is looped the thread for forming the warps. The fingers C are fixed, but the fingers E are mounted upon a spring thumb-piece D^1 to enable them to be raised and depressed for forming sheds for the weft, which is inserted by a needle. The hooks c, e of the two sets of fingers C, E are turned in opposite directions to prevent the warp from slipping off as the hooks pass each other. The plate F^1 has a tang f to slide between guides F, and dogs f^3 to engage with notches f^1 in the depending sides b of the saddle.

9311. Schwarz, P. April 22.

Embroidery.—A groundwork a of lace or other trimming woven on a suitable loom is ornamented by sewing on it pieces of velvet, silk, leather, or gold material e, Fig. 1, cut out by means of cutting-moulds. Perforations b of the ground may be covered with net of gold fibre &c. d. Cords e, Fig. 2, strings of pearls, pearls, gimp, or buttons may be used as additional ornaments, and the cords, edges of perforations, or the edges of the applied pieces may be sewn or hemmed.

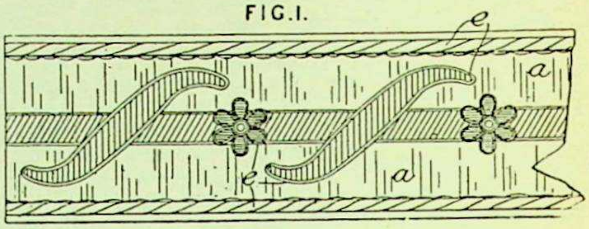


FIG.1.

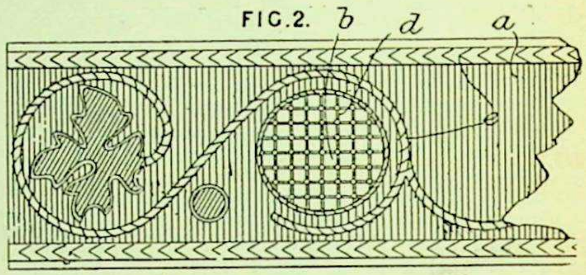


FIG.2.

9590. Lake, H. H., [*Industrial Manufacturing Co.*]. April 26.

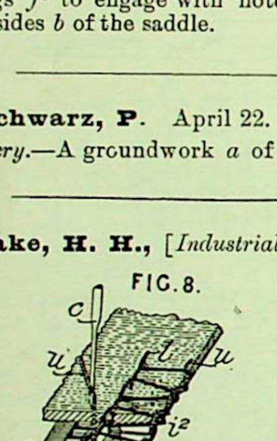


FIG.8.

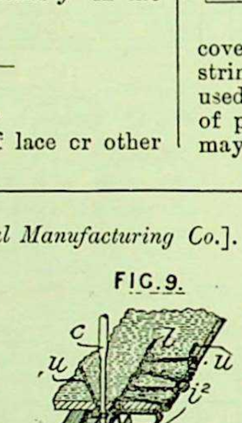


FIG.9.

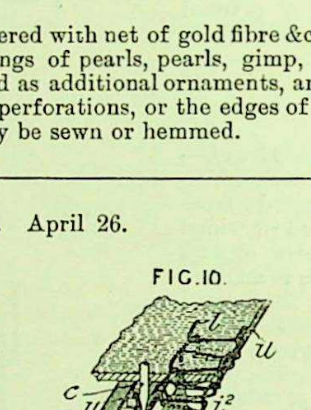


FIG.10.

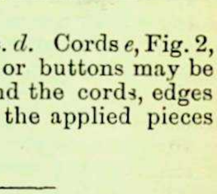


FIG.12.

Overedge - stitching machines; double - loop stitching; knitted fabrics, sewing. — The invention is for a machine adapted for working at high speed. The mode of forming the stitch is shown in Figs. 8, 9, and 10. It is made by a needle c, a thread-carrying looper d, a loop-spreader e, a tongue i^2 on the throat plate i^1, and a corresponding tongue which is not shown on the presser-foot. Starting from the position

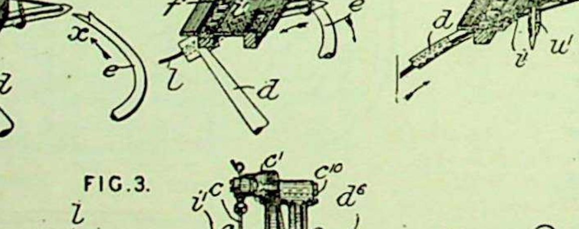


FIG.3.

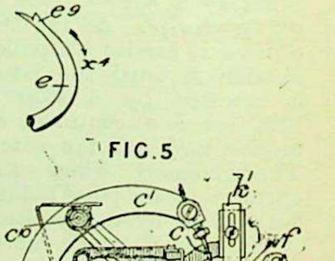


FIG.5

shown in Fig. 8, the loop-spreader e advances as indicated by the arrow &c., passes through the loop of upper thread u and engages with the lower thread l which is pushed over the edge of the fabric and the tongue of the presser-foot and is presented to the needle, as shown in Fig. 9. The needle now descends and secures the lower thread, and, as it ascends, forms a loop u^1 which is caught by the looper as appears from Fig. 10. The position is now once more that shown in Fig. 8, and the cycle is repeated. The looper and the loop-spreader are similarly mounted and actuated. The former is pivoted at d^1 on a shaft d^2 which is carried in bearings a^1, a^2 and is oscillated from the main shaft B, Fig. 3. The looper is also oscillated about its pivot d^1 by an eccentric-rod d^6 coupled to it by suitable pivoted connections.

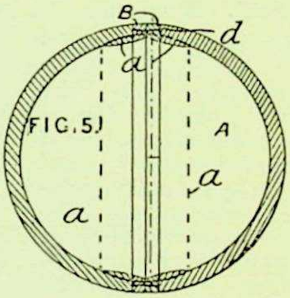
Needle-driving.—The needle c is carried on an arm c^1 pivoted to a plate c^3 which is itself pivoted to the frame at c^4. The arm c^1 and the plate c^3 are independently moved from the main shaft, so that the needle is given two motions, an up-and-down and a to-and-fro one.

Feed.—The feed-bar f is carried on an arm f^2 which is pivoted to the plate c^3 and is moved by it. The feed-bar is raised and lowered by an eccentric f^4 on the main shaft.

Governing needle thread; governing under thread.—The threads pass through similar tension devices, one of which is shown separately in Fig. 12. The feature consists in making the lower disc h^2 in the form of a ring supported by spokes, this arrangement enabling the tension to clear itself of dust. The take-up for the upper thread is effected by the arm c^1, which has an eye c^{10} to receive the thread. A rotary take-up G is provided for the lower thread.

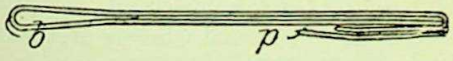
Trimming.—The edge of the work is trimmed by an adjustable blade k^1 fixed on the cloth plate, and acting with a blade k^2 carried by an arm k^3 oscillated by the main shaft.

10,075. **Simmons, W.,** and **Simmons, J.** May 3.



Sewing balls.—Leather - covered balls, of the kind used for cricket, are made so that none of the stitches, by which the two halves of the case are sewn together, are exposed to the surface. Welts B are sewn, by stitches a, to the half cases A, while these are turned inside out. The two half cases are then sewn together, over the core, by stitches d which pass through the two welts from side to side.

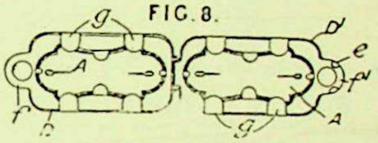
10,299. **Smith, A.** May 5.



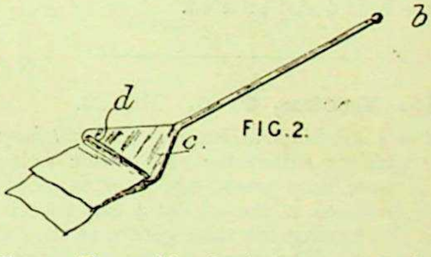
Bodkins.—A piece of steel wire or the like is bent as shown, one of the ends p, which is sharpened, extending beyond the other, and both being inclined inwards. The bodkin is threaded by passing the point p through the tape &c., which is then slipped to the rear end b. The bodkin may be removed from the work at any part by forcing through the point p.

10,312. **Lehmann, E. P.** May 5.

Pin cases.—The invention comprises a box, which may be made as a watch trinket, to contain a pair of special pins. Fig. 8 shows the box or trinket open. It is in two parts D, D^1, hinged together and each provided with lugs g or other means to hold the pins A in place, and with spring lugs e to fasten the part f of the box to the part f^1 when the box is closed.



10,501. **Deane, D. J.** May 7.



Bodkins.—To enable the instrument to be used with ribbon without creasing it, the head c is made broad and flat, and the eye d consists of a slit situated transversely to the shank.

11,241. **Peters, A. B.** May 17.

Sack-seaming machines; needle-driving; governing needle thread.—This machine is specially designed for hemming the mouths of sacks. The table or work-plate D is hinged at D^2 to the casting A so as to come flush with it. B^1, B^2 are fast and loose pulleys on a shaft which drives the main shaft E of the machine by a pin C^1. The shaft E carries a looper F, preferably of the Willcox and Gibbs type, and also actuates the needle-bar by a crank E² and the tension by a

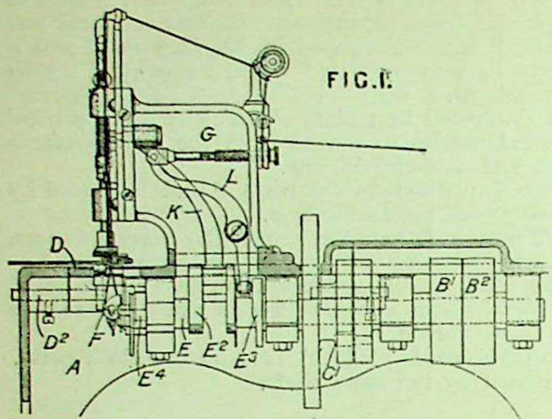


FIG.1.

cam E³. The rods K and L which operate the two last are enclosed in a casing G. E⁴ is a cam for operating the feed.

11,270. Lowe, M. H. May 17.

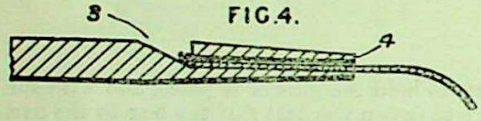


FIG.4.

Sewing-needles.—These are chiefly for surgical purposes. Fig. 4 shows one form, but slight modifications may be made. The head of the needle, which is taper, is axially bored at 4 and notched as shown at 3. A single thread is passed down the hole 4 and knotted.

11,554. Brown, O. E. May 23.

Boot-sole stitching-machines; chain-stitching machines; guiding materials; feed.—The welt-guide F, or, in turn shoe work, the fork, is fixed to a carriage G which is moved by a cam-rod G¹ in a circular slot having the same centre as the curved-needle carrier. The stock is clamped by the welt guide F against the fixed channel guide E during the formation of the stitch. The feed-point C, which is carried on the shaft C⁴ having a lateral and an oscillatory movement, is adapted to penetrate the stock to feed the work in front of the channel guide.

Governing needle thread.—The Provisional Specification refers to take-up devices, consisting of a main and an auxiliary take-up, the former of which takes up slack while the needle is out of the work and also draws thread from the supply, and the latter, which is spring-actuated, takes up slack and draws the thread tight while the looper is laying it round the needle.

(*For Figures see next column.*)

11,554.

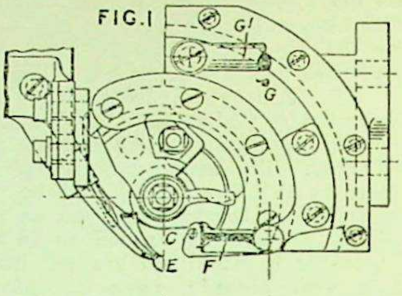


FIG.1

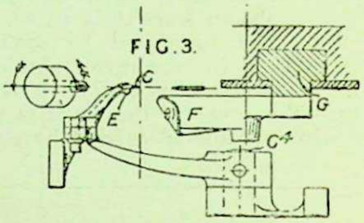


FIG.3.

11,790. Berardi, F. May 24.

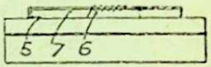


FIG.29.

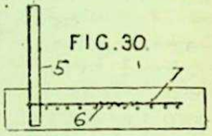


FIG.30

Sewing-machines, driving; guiding materials; stopping-gear.—The power is derived from a water motor consisting of a small impact wheel driven by the ordinary domestic water supply. The motor is coupled directly or by means of bands and pulleys. The material being sewn is guided by a bar 5 of L-section, and is held down by a wire 7 placed at right-angles, while a spring 6 on the wire guides the edge of the fabric. The machine may be stopped and started by a treadle, which either tilts the machine so as to slacken the driving-band or turns a tap cutting off the supply to the motor. A brake may also be used consisting of a wire carrying a block of rubber and hinged so that it may be pressed by hand against the flywheel of the machine. The spool-winding arrangement may also be driven from the motor.

11,807. Johnson, J. Y., [*Shaw, W.*]. May 24.

Boot-sole stitching-machines; chain-stitching; governing needle thread.—The invention consists of means for seizing each loop of thread and holding enough of it to form half the next loop, so that the thread is prevented from being drawn through the hook of the needle. This is effected by a moving arm A which seizes each loop as it is formed by the needle D. The needle, after drawing the loop through the work, gives it up to the arm A, which takes the strain of the take-up when the latter sets the previous stitch. The setting of the stitches may in some cases be effected by the arm A.

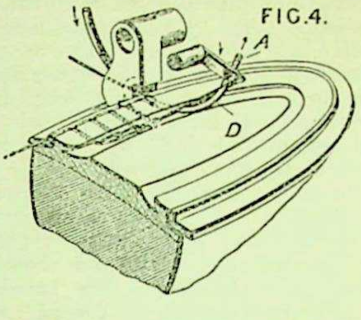


FIG.4.

12,103. Turton, J. May 27.

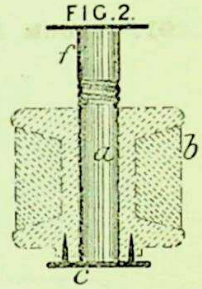


FIG.2.

Needle cases.—A needle case a is fitted in the longitudinal perforation of a thread reel b. The case has at one end a head c provided with spikes for insertion into the reel, and at the other end a screw cap or lid f. In a modification, the aperture of the reel serves as the case, being closed at each end by a short tube having a head for attachment to the reel by means of spikes or otherwise.

12,131. Birch, W. May 28.

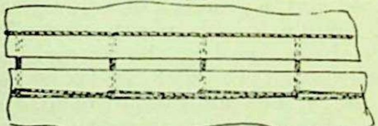


FIG.10.

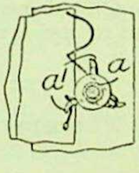


FIG.6.

Basting-machines; chain-stitching.—The invention relates to machines for roughly attaching together the ends or edges of pieces of fabric for dyeing, cleaning, &c. It consists of a head a provided with hooks a^1 and intermittently rotated from the main shaft by a cam or other means. The hooks seize the thread between the needle and the fabric, and cause loops of it to be formed so that, when pulled out, the seam appears as in Fig. 10, with the edges abutting or having a space between them. Each tooth continues to act until the succeeding one has drawn out its loop. The loops are thus prevented from being drawn tight. A reciprocating hook may be employed instead of the device just described.

12,709. Cheetham, F. W. June 7.

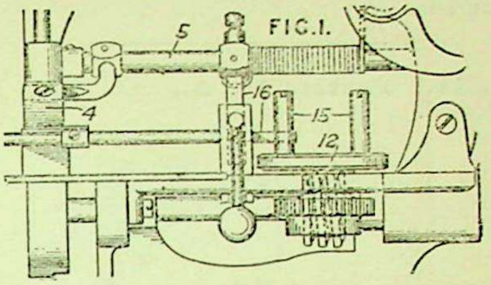


FIG.1.

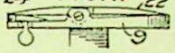


FIG.4.

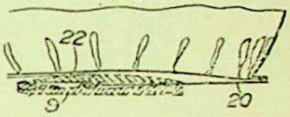


FIG.6.

Hat-sewing machines; folding-attachments.—The spring shaft 5 and the pleating-blade 4 are intermittently reciprocated by pegs 15, adjustably fixed in the wheel 12, and engaging with a tappet 16 adjustably secured to the shaft 5. The wheel 12 is preferably rotated by a worm on the main shaft.

Work-supports.—To the turntable 9, Fig. 4, is centrally pivoted a clamping-plate 22 adapted to pass through a central slot in a backing 20, Fig. 6, secured to the central part of the hat lining, and so hold the latter in position on the turntable. The clamp is tightened by a pivoted wedge 24.

12,735. Wheeler, S. H. June 7.

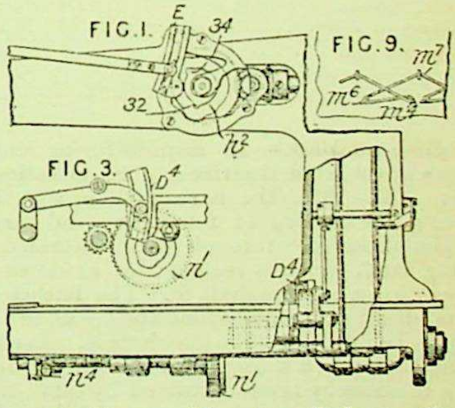


FIG.1. FIG.9. FIG.3.

Hem-stitching machines; needle-bars, vibrating laterally; feed.—The needle-bar is vibrated transversely to the hem through a slotted link E from a cam h^2, the projections 32, 34 of which move it to and fro when the needle is in the work at m^4, m^6, Fig. 9, outside the hem, so that threads are displaced to form openings at right-angles to the hem, thus imitating hand-work. The feed-dog receives horizontal motion from a slotted arm D^4, Fig. 3, vibrated by a cam n^1. Its vertical position is controlled by a cam n^4 on the same shaft as the cam n^1, and the arrangement is such that the work is moved first forwards, then backwards, and then forwards, m^4, m^6, m^7 being the positions of the needle in the work at the end of each of these movements.

12,811. **Foster, H. A.**, and **Lee, R.** June 8.

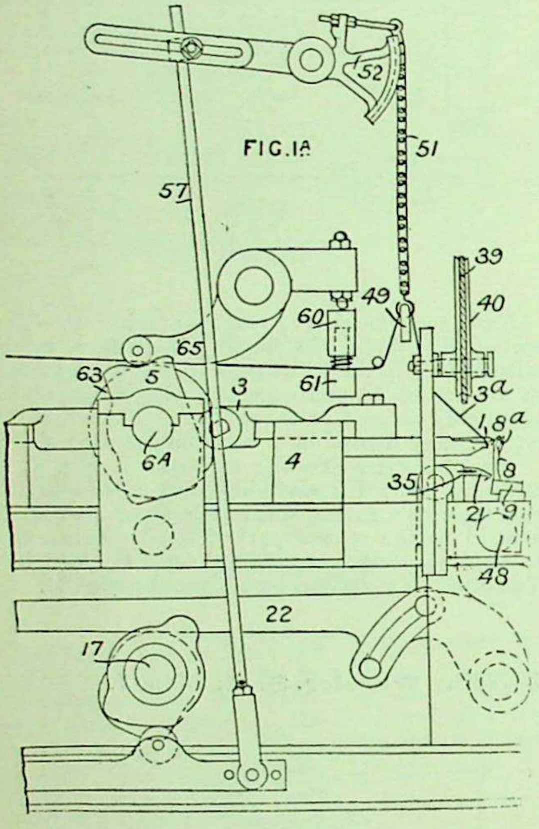


FIG. 1A.

Tufting-machines.—In manufacturing cut-pile fabrics of the kind described in Specification No. 5158, A.D. 1896, the horizontal needles *l* for piercing the backing or foundation and carrying the pile threads 3^a through it are actuated by a sliding bar 3, which is reciprocated in slides 4 by tappets 5 on a cross-shaft 6^a. The latches 8^a of the needles 8 protrude beyond the hooks, to enable them to be opened by the pile threads. The hooks are mounted upon a bar 9, which is moved up and down in slides by levers actuated by cams on the shaft 17, the extent of the movement being adjustable by shifting the position of the ends of a connecting-link in slots in the levers for the purpose of regulating the length of pile loop. The bar 9 also receives from suitable levers and cams an oscillating motion upon pins carried by the brackets 48, and from a pin and slotted bracket a slight lateral motion as it is oscillated. The hooks 21, which receive the loops from the needles 8, are mounted upon a cam-actuated lever 22, and are oscillated also by suitable levers and cams. A band knife 35 for cutting the loops passes through slots in the hooks 21, and is connected to a rope 39 passing over pulleys 40; it is reciprocated by a pin engaging with a grooved cam. To supply a sufficient length of pile threads to form the loop, and at the same time to maintain tension at the required time, the pile threads pass over a bar 49, which is suspended by chains 51 from sectors 52, and moved up and down by a connecting-rod 57 from a cam actuated lever; the threads are normally held against a block 61 by a spring bar 60, which is released at the required times by a tappet 63 and lever 65. The Provisional Specification states also that the extent of movement of the latch-needle bar 9 may be adjusted by varying the position of its fulcrum studs, and that nipping-rollers which hold the thread are turned to let off a predetermined length of thread by ratchet mechanism operated by a tappet on the tappet shaft of the machine.

13,491. **Crook, R.**, and **Clegg, J.** June 17

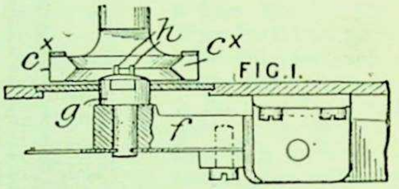


FIG. 1.

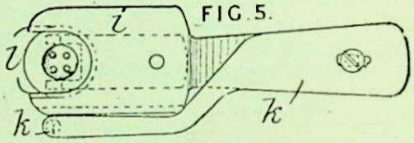


FIG. 5.

Sewing-machines, attaching buttons in.—The button, of the 'four-hole' kind, is positioned by being placed on the prongs *h* of a disc *g* carried by a lever *f*. While in this position, the button is gripped by the groove *l* of the holder *i*, which is slid in between the prongs c× of the presser-foot, and the disc *g* then allowed to drop. The two positions of the holder *i* required to bring the two pairs of holes in the button in turn under the laterally-oscillated needle are determined by the engagement of the spring pin *k* with slots in the prongs c×.

13,629. **Thompson, W. P.**, [*Stickerei Feldmühle vorm. Loeb, Schoenfeld & Co.*]. June 18.

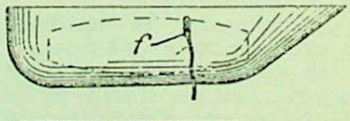


FIG. 1.

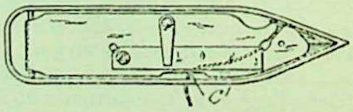


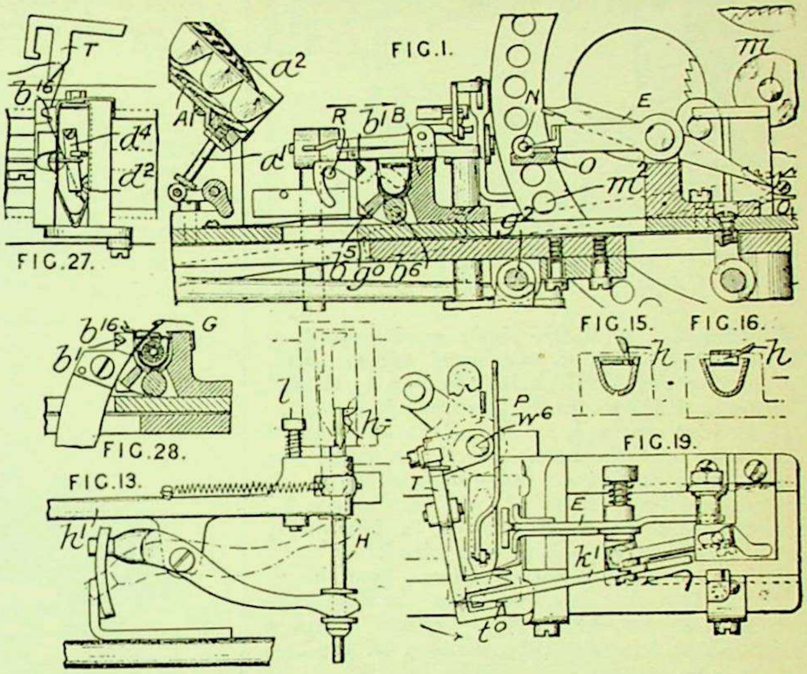
FIG. 2.

Embroidery; lock-stitch shuttles.—Relates to the shuttles of embroidery machines and the like.

The thread hole *f* is formed as a slot in the vertical wall of the shuttle, and perpendicular to its direction of motion, so that an automatically-moved hook coming sideways from below can grip the thread at the recess c^1 in the cover and draw it through the slot *f*.

13,630. Thompson, W. P., [*Stickerei Feldmühle vorm. Loeb, Schoenfeld, & Co.*]. June 18.

Embroidery ; lock-stitch shuttle sewing-machines.—Relates to machines for filling and threading the shuttles of embroidering-machines and the like. Fig. 1 shows a part elevation of the apparatus. The empty shuttles are held in the shoot A^1 by a spring a^2 and discharged one at a time by the fingers a^1. The shuttle falls into a sliding holder B, the side wall b^1 of which is carried on a pivot b^6, and, after moving outwards for the reception of the shuttle, springs back to retain it in the holder, a cam b^5 on the shaft b^6 at the same time preventing vertical movement of the shuttle. The holder B is now moved towards the plate *o*, on to which a bobbin has meanwhile been pushed by the rod N from one of the bobbin holes m^2 in the intermittently-revolved drum pivoted at *m*. During this movement of the holder, the shuttle cover opener, shown in plan, Fig. 13, comes into action. A rod H, pivoted in a lever h^1, has a compound movement such that the finger *h* on it is first inserted into a hole in the cover, Fig. 15, then turned, Fig. 16, and finally lifts the cover to a vertical position. The holder B now reaches the plate *o*, from which the bobbin is pushed, into its correct position, by the levers E pivoted to the slide O which carries the plate *o*, the loose end of the thread being seized by the jaws k^1, shown in plan in Fig. 19. A lever P is next moved forward partially to close the shuttle cover, and at the same time the thread-grip T carried on the shaft w^6 swings forward. Its jaws seize the thread, a projection t^0 having forced open the jaws k^1, and the grip T, moving back, Fig. 27, draws the thread through the slot d^2, and under the clip d^4 on the shuttle cover and the clip b^{16} on the holder. The holder B now moves to the left, passing under the pivoted spring-controlled projection *l*, Fig. 13, which completely closes the shuttle cover, and into the line of action of the thread-hook G, pivoted at g^2, Figs. 1 and 28, which enters the hole g^0 in the wall b^1 of the holder, and passes through slits in the shuttle, pulling out the end of the thread on its return. A rod R finally pushes the filled and threaded shuttle into the discharge channel.



13,699. Cornely, E., and **Cornely, R.,** [*trading as* Cornely & Son]. March 2, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].

Embroidery ; sewing-machines, attaching beads in ; cords, applying. — The invention consists of means for feeding strings of beads or cords, the application to the former purpose being shown. A positive feed is given to the string of beads 12 by a bar *d* which is attached by a screw *h* to a cam L. The cam slides on the tube G, through which the beads pass downwards to the work, and is moved down by a block 5 on a collar M which revolves and carries the thread arm *b* with it. The return movement is effected by a spring *m*. A shield *a* prevents the beads or cord from being carried round with the thread arm. An arrangement is also shown in which the feeder is actuated directly by the main shaft. To cause the reel on which the cord or string of beads is wound to turn regularly, it is fixed on a spindle which rotates in bearings.

FIG.3.

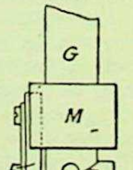
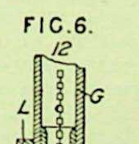


FIG.6.



13,820. Thompson, W. P., [*Meyer-Nägeli, E.*]. June 21.

FIG. 2.

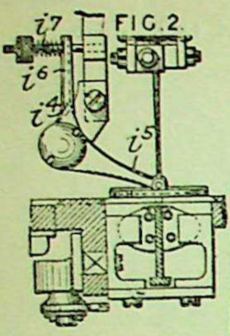


FIG. 19.

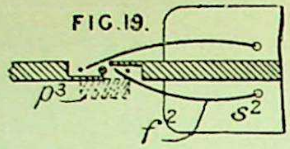
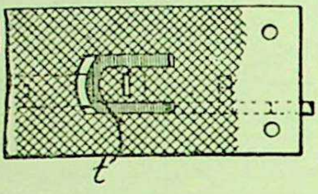


FIG. 6.



Hem-stitching machines; feed; work-supports.—The work-plate has a roughened surface, and, surrounding the needle hole in it, is a U-shaped aperture in which works the U-shaped feed-dog *t*.

Presser-feet are made in several parts, so as to bear evenly over the hem. Fig. 2 illustrates one in two parts carried on bell-crank levers i^4, i^6, pivoted to the presser-bar and controlled by separate springs i^7. A presser-foot in four parts, each of quadrant shape, is also described.

Lock-stitch shuttle sewing-machines.—One thread f^2 of the two shuttle threads, on the backward movement of its shuttle S^2, is drawn round a projection p^3, whereby entanglement of the two threads is prevented.

14,138. Lake, W. R., [*Bray, M.*]. June 25.

Boot-sole stitching-machines; chain-stitching; wax-thread machines.—The invention is particularly applicable to boot-sole stitching-machines, certain details of it consisting of means for enabling curves of small radius, such as in the toes of boots, to be turned with facility. The means for operating the needle and looper are ordinary in principle, and are not part of the invention. The motions are, as usual, derived from cams on the main shaft.

Feed; governing needle thread.—The feed-pulley 27 is rotatably carried on a spindle 23, and is connected with a ratchet-wheel 29 operated by a pawl so as to give off a determined quantity of thread. The spindle 23 does not rotate, and is acted on by an adjustable spring 33, so as to apply friction to the pulley 27 by means of discs 31 and plates 25. This friction can be relieved, and the tension pulley freed in all respects by a lever 38 operated by hand or foot, or by the starting and stopping lever of the machine. In a modification, the spindle is divided into two parts, one of which rotates and conveys motion from the ratchet-wheel to the tension pulley, and a clutch is substituted for the pawl and ratchet. Nearer the needle the thread passes over three pulleys, the middle one of which is movable and is acted upon by a spring. The pawl and ratchet, or clutch, is operated by a lever 47 the connection of which with it is adjustable so as to regulate the quantity of thread given out.

FIG. 3.

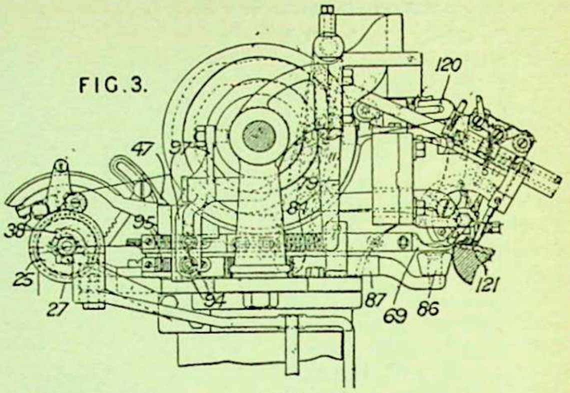


FIG. 4.

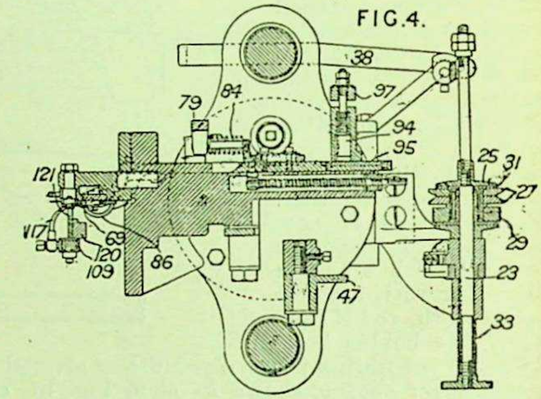
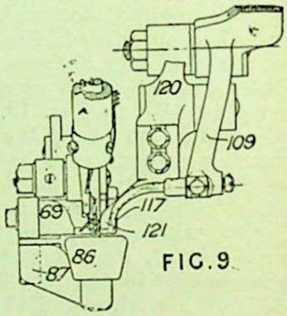


FIG. 9.



Guiding materials; feed; needle-driving; work-supports; perforating-devices.—The work is supported while the stitch is being made by two supports, one consisting of a roller 86 mounted on a slide 87 pressed forward by a spring, and the other consisting of an arm 69, also pressed forward by a spring, but slightly withdrawn during the feed by a lever 79. A spring 84 is interposed between this lever and the block on which the arm 69 is mounted, thus enabling it to yield. Both of these supports are locked firmly by bolts 94 operated by a lever 97 and engaging with racks 95, while the needle is being withdrawn from the work. There is in addition a channel guide 121 acting synchronously with, but independently of, a feeding-point 117, Fig. 9. Both of these, which are adjustable, are carried by a slide giving the feeding motion, and are also actuated by separate levers 120, 109, which raise them from the work and bring them down to it again. The channel guide moves across the path of the needle, while the feeding-point moves into, or very nearly into, its path, thus acting partially as an awl in the former case. The needle, channel guide, and feeding-point being very close together, curves of small radius can be turned. During the feeding operation the needle commences to return from its extreme position, thus relieving the strain upon the thread.

14,268. House, W. M. June 28.

FIG. 1.

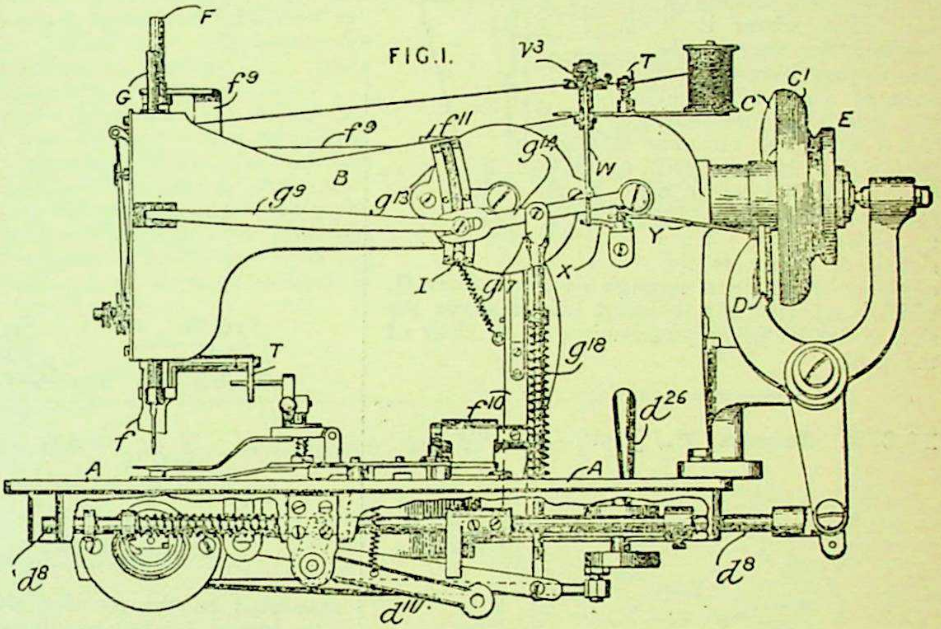


FIG. 2a.

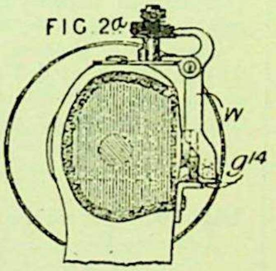
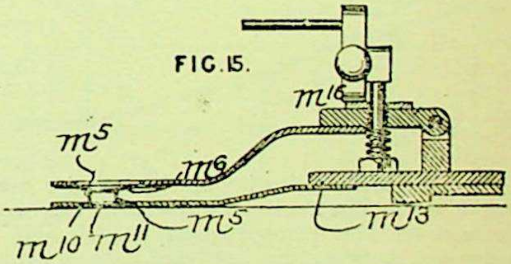


FIG. 15.



Buttonhole - sewing machines; buttonholes, barring and cutting; stopping, automatic; stopping-gear; governing needle thread.—The machine is started by depressing a bell crank d^{11}, Fig. 1, by means of a treadle. The rod d^8 is thus moved to the right, the pulley E thrown into frictional contact with the disc C^1 on the main shaft, and the brake block D withdrawn from the cam surface c. The machine is automatically stopped by a spring, which moves the rod d^8 to the left when released by a cam rotating with the feed-wheel. It may also be stopped by a hand-lever d^{26}. The cutter f is adjustable on the bar F, which moves in bearings in the end of the arm B, and is rotated to engage with the needle-bar, at any desired stage of the sewing operation, by the following means:—A rod f^9 coupled to a crank on the cutter-bar is, when required, thrown into engagement with a lever f^{11} secured to a rocking spindle I. This engagement is effected by a lever f^{10}, one end of which passes through the bed-plate A and engages a cam rotating with the feed-wheel. The needle-bar G vibrates in a hinged frame swung to and fro by a rod g^9 and a link g^{13} secured to the rocking spindle I. The amplitude of the swing is increased to form the barring-stitches at the ends of the buttonhole by moving the end of the rod g^9 outwards along the link g^{13}. This movement is effected by a spring g^{18} when the rod g^{17} is freed by a cam, rotating with the feed-wheel. The tension of the thread is automatically reduced during the formation of these barring-stitches by the means shown in Figs. 1 and 2^a. The thread passes between two discs pressed together by a spring v^3. When the lever g^{14} is moved upwards to increase the swing of the needle-frame, it rocks a lever W and separates the two discs. The tension is also reduced, when the machine is stopped, by rocking the lever W by means of a bell crank X and rod Y attached to the brake block D. The cloth clamp is shown in Fig. 15, and consists of a lower member having a cylindrical depression m^{10} in which is a rectangular opening m^{11}. The upper member has a large rectangular opening in its free end to which are secured a pair of serrated bars m^5 by means of arms m^6 formed integrally with them. The top member is depressed by a cam lever m^{16}, which also actuates an ordinary tension device T, Fig. 1. The bar m^{13} carrying the clamp is moved in the required manner by a pair of cams rotating with the feed-wheel.

14,480. Cassels, J. June 30.

Sewing-machines, binding edges in; work-supports; frames. — Relates to machines such as those for sewing the binding on hat brims, where it is necessary for the shuttle &c. to pass between the edge of the brim and the body of the hat. The arm A of the machine is extended downwards, and carries a shuttle box C covered by a work-plate *c*. The shuttle or looper, as the case may be, is driven through a vertical shaft G, which is actuated at a sufficient height above the shuttle for its driving-mechanism to be clear of the work.

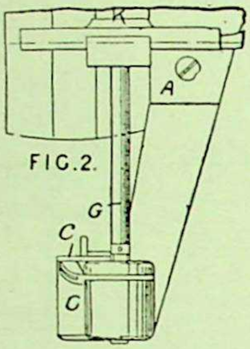
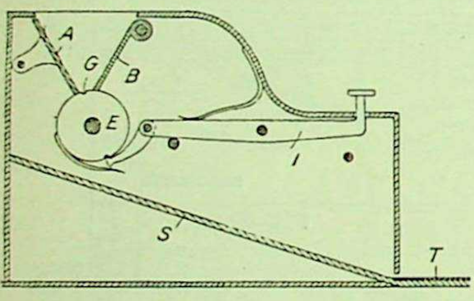


FIG. 2.

14,628. Jensen, P., [*Utne, J.*]. July 2.



Sewing-needles, delivering one by one for counting or sale. The needles are stored in the hopper formed by the pivoted plates A, B, and are delivered, on pressing a key lever I, by a cylinder E which rocks far enough to bring the groove G, containing one needle, beyond the hopper. The needle then falls out of the groove, and down the shoot S to the plate T. A separate delivery mechanism is used for each size of needle, the numbers being marked on the keys.

14,646. Ellis, H. S. July 2.

Boot-sole-stitching-machines; wax-thread machines; governing needle thread.—Fig. 18 shows a side elevation of the thread-puller and thread-guide, and Fig. 16 a plan of the thread-guide of a machine for stitching the sole to the welt. Machines for stitching the welt to the upper, and for harness and like work, of similar construction, are also described. In one side of the thread-guide 40 is a groove 48 in which the thread-puller 52 lays the thread, at the same time pulling out the requisite amount for a loop. The thread is supported by the rounded side 51 of the guide. The curved hooked needle enters the groove 48 and withdraws with the loop.

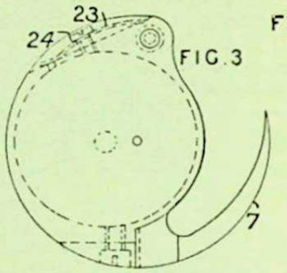


FIG. 3

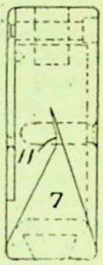


FIG. 4.

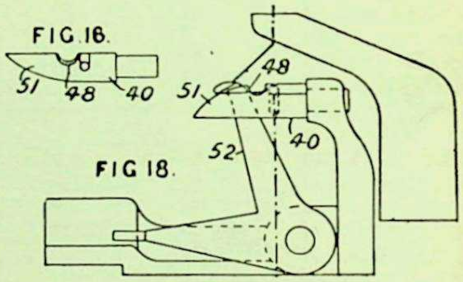


FIG. 16.

FIG. 18.

Lock-stitch shuttles; governing under thread.—The shuttle hook 7, Figs. 3 and 4, has a recess 11 at one side near its point. The thread tension consists of a spring 23 adjustable by a screw 24.

14,766. Inslee, W. H., [*Singer Manufacturing Co.*]. July 5.

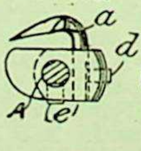


FIG. 3.

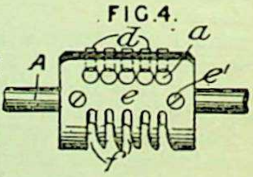


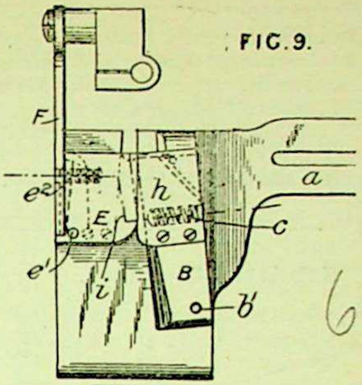
FIG. 4.

Chain-stitching machines; multiple-needle machines; needle shields.—The loopers *a* may be attached to the holder *e* by screws *d*, or may be formed in one therewith, the holder being secured to the rocking shaft A by screws e^1. Slots *f*, with chamfered edges, are formed in the holder and serve to guide the needles accurately into the position for the looper to take the thread. The invention is applicable to single-needle machines.

14,767. Inslee, W. H., [*Singer Manufacturing Co.*]. July 5.

Sewing - machine folding - attachments ; guiding materials ; multiple-needle machines.—The machine is for forming a seam, as shown at Fig. 8, which is sewn through simultaneously at z, z by two needles, the edges of the material being folded over at x^1, y^1. Guide-blocks B, E, with concaved edges inclined to the direction of movement of the work and to each other, are pivoted respectively at b^1 and e^1 to a plate a attached to the work-plate and to an arm F mounted, so that it can be turned out of the way, on the presser-bar. The blocks are held in normal position by springs c, e^2, stops allowing a little lateral play. Spring plates h, i are fixed to the upper side of the block B and the lower side of the block E, their edges projecting over and under the grooves in the blocks. In this way, when a thick part of the work (such as a cross-seam) comes to the guides, they can yield both horizontally and vertically and no jamming takes place. Modifications in detail may be made ; for example, the blocks may be fixed instead of pivoted.

FIG. 9.



U.S. 607005

FIG. 10.

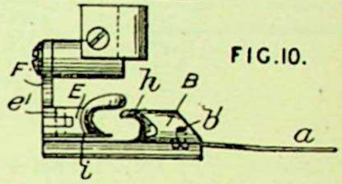
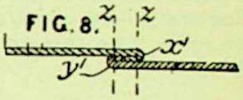
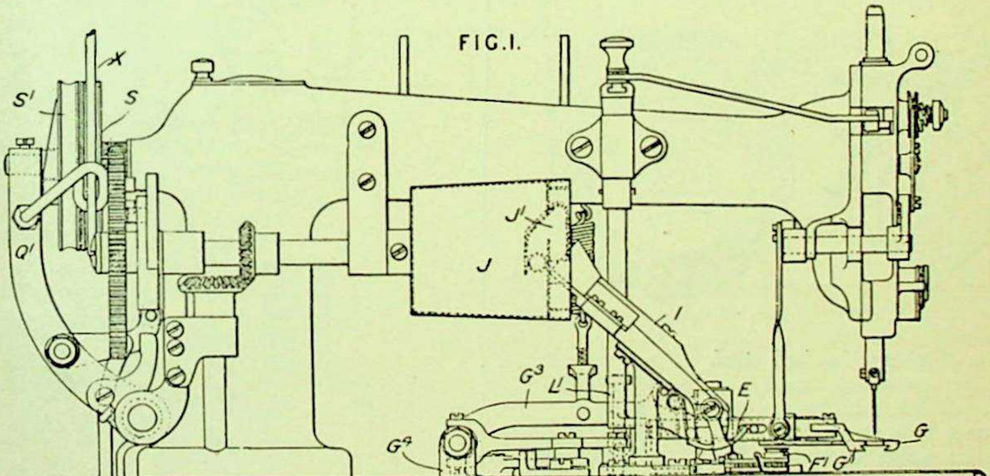


FIG. 8.



14,937. Thomson, W. T., and **Goodyear, W. E.** July 7.

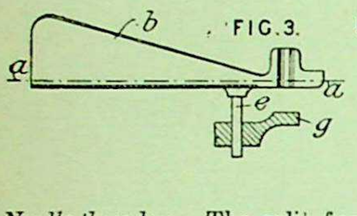
FIG. 1.

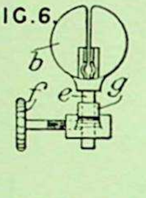


Sewing-machines, attaching buttons in.—The buttons are contained in a cylindrical casing J from which they are fed by a passage J^1, which takes only one at a time, to the shoot I provided with a medial fin to turn the button right side uppermost. The mouth of the shoot is closed by a pivoted gate E, which is pushed aside by the button-carrier to allow a button to drop on to the latter. The carrier consists of an oscillating lever carrying a disc F^1 having prongs to receive the buttons, and oscillated, but only when in position to receive a button. The carrier brings the button to the jaws G, G^1, which seize and raise it off the prongs. From the vertical shaft L^1

the lateral movement of the needle-bar is obtained, and also the longitudinal movement of the plate G^3 which carries the jaws G^1, G, and is pivoted to the swinging arms G^4, the combination of the two movements producing the necessary diagonal motion between the needle and button. By means of a treadle, the lever Q^1 is operated to shift the belt X from the loose pulley S, which actuates the button-feeding mechanisms, on to the driving-pulley S^1 of the sewing-mechanism. The position of the lever Q^1 is also controlled by the rotation of a cam, and, after an interval depending on the speed and shape of the cam, is returned to the position shown, stopping the sewing-mechanism and restarting the button-feeding pulley.

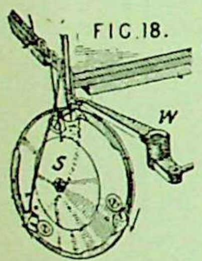
15,052. Schütte, J. July 8.

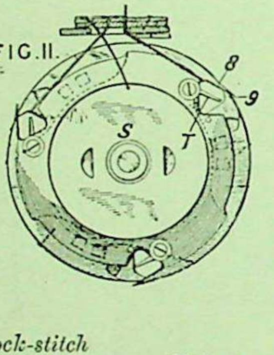


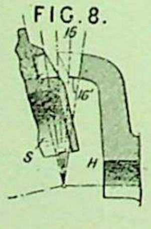


Needle-threaders.—The split funnel *b* has a depending pin *e* to which the arm *g* is clamped by the screw *f*. The arm *g* is so adjusted that, when the point of the needle rests thereon, its eye is in line with the thread *a*.

15,307. Richards, F. H. July 12.

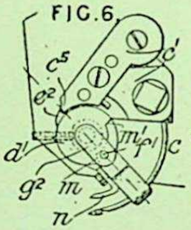


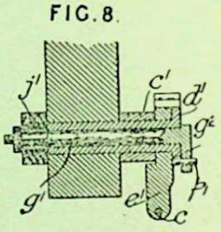


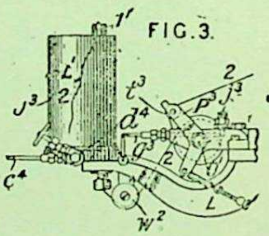


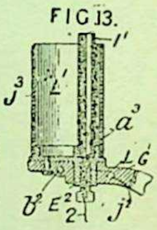
Chain-stitching in lock-stitch machines; governing needle thread.—Relates to means for producing lock or chain stitching in the same machine. The looper S, which revolves in clockwise direction, has two sets of hooks 8 and 9 pointing in opposite directions. The hooks 8 form the loops, which, when fully drawn out, slip on to a pivoted spring-pressed finger T, which regulates their tension until they slip on to the pivoted delivery hooks 9, which are yieldingly pressed towards the hooks 8 so as to allow for the greater length of thread required in the newly-formed loops in chain-stitching. The machine is normally adapted for lock-stitching, the under-thread spool &c. being, however, not shown. To produce chain-stitching, the lever W, operated by a cam, is brought into action, pulling aside at the right time a portion of each loop to allow a succeeding one to pass through it as shown in Fig. 18. The movement of the device which throws the lever W into action at the same time makes the necessary alteration in the tension regulator of the upper thread. The axis of the looper is oblique to that of its driving-shaft, and, in order that the loop-carrier H may satisfactorily drive and support the looper, the former has teeth with spherical outer and inner surfaces 16, 16^1, Fig. 8, which engage with similarly-shaped sockets in the looper, these spherical surfaces having as their centre the point of intersection of the looper and looper-carrier axes.

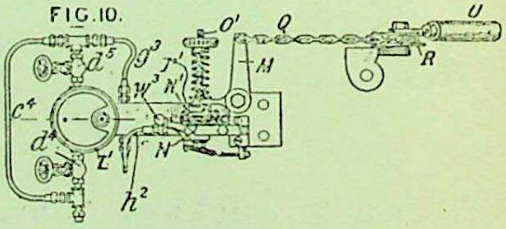
15,309. Lake, H. H., [*Bertrand, J. E.*]. July 12.











Boot-sole stitching-machines; waxing thread; governing needle thread; governing under thread; tack-extractors.—The needle-carrier c^1 is mounted loosely on the sleeve d^1, and the needle-guide e^1

which carries the tack-extractor n is also loose on it and has a pin f^1 which oscillates between stops m, m^1. The spindle g^1 within the sleeve d^1 has an arm g^2 bored to receive the pin f^1, and its other end is connected to a coiled flat spring j^1. When the needle c is withdrawn from the work and reaches the position shown in Fig. 6, the shoulder c^5 of the needle-carrier comes in contact with the shoulder e^2 of the needle-guide, and moves it and the tack-puller to the rear against the tension of the spring j^1 until the pin f^1 comes in contact with the shoulder m^1. The lever M is connected by a chain Q to the drum R and handle U, and engages the groove r^1 of the hub N^1 mounted upon the stud o^1. The thread 2, after passing through the wax-pot L^1, is led partly round the sheave w^2, through the hole w^3 in the bracket L, round the tension-wheel N, and partly round the sheave t^3 carried by the spring-controlled lever P^3, and then to the stitch-forming mechanism. By depressing the handle U, the tension is relieved while removing a boot &c. after sewing. The wax-pot L^1 consists of a tube I^1, having perforations a^3, placed eccentrically to the casing J^3, and connected to the boss E^3 into which the thread-stripper G^1 is screwed. The bracket L contains holes b^2, j^2 through which steam is circulated by means of the pipes shown. At the start, sufficient wax is melted to run through the apertures a^3 on to the thread 2, which is passed through the tube I^1 and stripper G^1 to the tension device described. After the wax at the bottom of the pot has been melted, it will generally be kept in this state by closing the valves d^4, d^5 and allowing the steam to circulate through the bye-pass pipe c^4, pipe g^3, passage j^2, pipe h^2, a hole in the bracket L, and the outlet pipe j^3.

15,781. Timewell, A. T. July 19.

Sack-seaming machines.—Fig. 1 shows an elevation, and Fig. 2 a plan, of a machine for sewing-up the mouths of sacks after they have been filled. The sacks are led to, and away from, the machine by a conveyer such as F, and, in the case of heavy sacks, are carried through the machine by the conveyer. Their upper edges may be folded by an attachment L, and are gripped by a pair of chains on flexible bands d, d driven in the manner shown. When comparatively light sacks are being dealt with, they are supported by these chains or bands. When chains are used, alternate links have grooves d^2 and projections d^3, Fig. 4, to grip the sack. The work-table is carried by adjustable supports so that it can be accommodated to sacks of varying height. The sewing-mechanism may be of any known type. The thread x^1 is cut between the sacks by a spring knife actuated automatically.

FIG. 1.

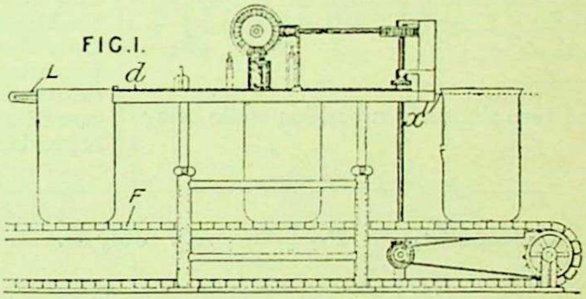


FIG. 2.

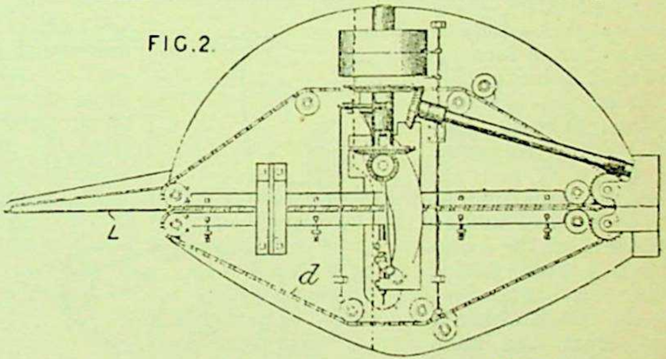
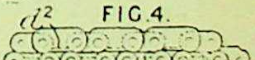
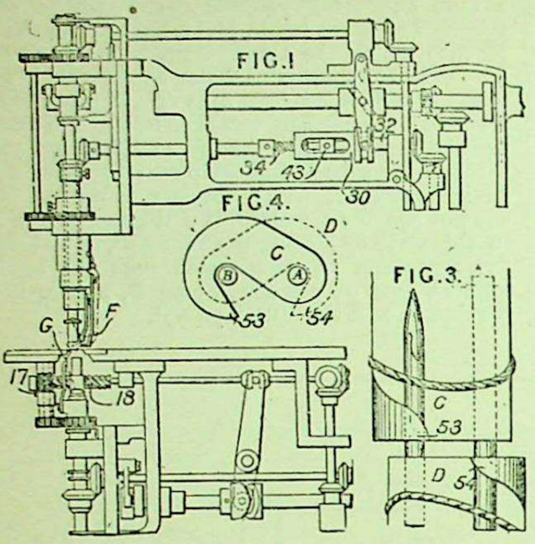


FIG. 4.



15,943. Cornely, E., and **Cornely, R.** July 21.

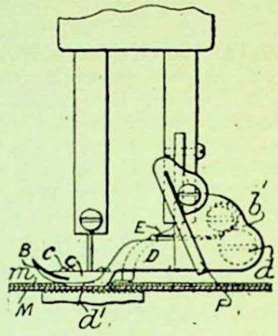
Embroidery; ornamental-sewing machines; overedge-stitching machines; work-supports.—Relates to the thread-carriers and work-supporting nipples of machines of the kind described in Specification No. 9848, A.D. 1896. The upper thread-carrier F is driven from a screw shaft 34, which is oscillated by means of a nut carried on a reciprocating sleeve 30. The shaft 34 is rotated from the hand-crank through the hollow shaft 32, which is connected with the sleeve 30 by projections 43 engaging in slots in the sleeve. The lower carrier G is independently oscillated from the lower shaft through screw gearing 17, 18. The work-supports or nipples C, D, Figs. 3 and 4, are formed with curved projections 53, 54, which partly enclose the needles and keep the work in position while being pierced.



16,462. **Noble, D.** July 28.

Sewing-machines, trimming or cutting in.—A scissors attachment is provided in a sewing-machine whereby the material sewn on a garment or the like may be cut to any desired pattern as in appliqué or similar work. A knife C is secured to the presser-foot B by screws *c*, *c*, and forms, in conjunction with a blade d^1, a pair of shears. The blade d^1 is carried by an arm D, pivoted at *d* to a bracket b^1 cast on or secured to the presser-foot, and is normally held down by a spring E, while the knife C rises and falls with the presser-foot. A horizontal flange on the blade d^1 separates the garment or the like M from the ornamenting-fabric *m*. When the cutting-attachment is not required, the arm D is raised and secured by a spring catch F. In the case of a double-needle machine, a pair of shears is provided at each side of the presser-foot.

FIG.1.



16,632. **Thompson, W. P.**, [*Eder, R.*]. July 30.

Overedge-stitching machines; buttonhole-sewing machines; feed.—Relates to feed and stitch-forming mechanism in buttonhole and overedge-stitching machines. The material-shifting device comprises the tube H and the pivoted lever Z. The tube H receives motion from the rack-bar *e* connected to a lever *d* having a roller in engagement with the cam *a* which is driven from the main shaft *b*. This motion is conveyed to the bar Z by a plate A, Fig. 14, surrounding the rectangular portion H^1 of the tube H, in turn enclosed by the ring i^1 attached to the bar Z, which is also operated by the lever X. The stitching shown in Fig. 9 is formed as follows :—The eyed and hooked needles *o*, *h* descend and pierce the work together, and the looped thread from the former is caught by the gripper *m*, delivered to the needle *h*, and turned round its hook by a device on the gripper, which is then withdrawn and the needles ascend. The arm *p*, which is operated from the shaft *b* by cams and levers, now advances the jaws *n* so as to catch the loop from the needle *h* and deliver it

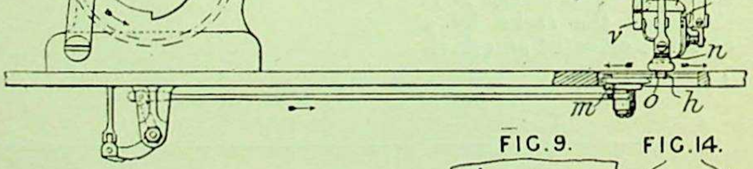


FIG.9.

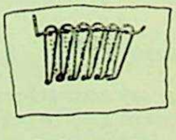
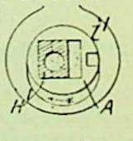


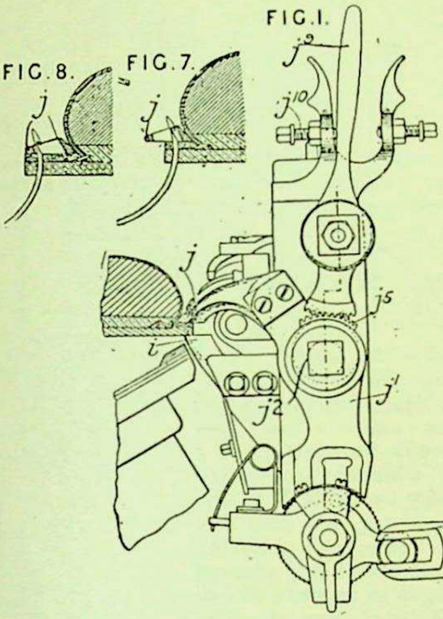
FIG.14.



below the needle o. The work has in the meantime been advanced a stitch, and, when the needles descend, the slide v presses the cam s against the shanks t of the pivoted jaws n, and causes them to open as they are being withdrawn. The jaws are afterwards closed by springs.

16,753. Lake, H. H., [*International Eppler Welt Machinery Co.*]. Aug. 2.

FIG. 8. FIG. 7. FIG. 1.



Boot-sole stitching-machines ; presser-feet ; guiding materials ; work-supports.—While making the stitch, the work is gripped between a support i and a combined presser-foot and work-guide j. This guide is movable laterally to the seam so as to accommodate a welt of varying width. It is shown in two positions in Figs. 7 and 8. In order to make the presser-foot movable, the lever j^1 on which it is mounted, and which actuates it, is pivoted on an eccentric stud j^2. This stud is pivoted on the frame, and is provided on one side with teeth j^5 engaging with similar teeth on a hand-lever j^9, the movement of which is limited by adjustable stops j^{10}.

16,776. Köhler, J. Aug. 3.

Knitted-fabric sewing-machines ; double-loop stitching-machines ; overedge-stitching machines ; needle-driving.—The invention relates to a high-speed machine for hosiery and the like, the seam being shown to a large scale in Fig. 6. An arm c catches a loop of needle thread, passes it back over the edges of the fabric, and presents it to a looper d which passes the under thread through it. The needle then passes through a loop of the under thread. All the motions are positive, and are effected by eccentrics on the main shaft. The needle-bar f is operated by an eccentric through a rod f^3, lever f^2, and link f^1. The looper d, which has a simple up-and-down motion, is actuated by a rod d^2 and arm d^1. The arm c has both a reciprocating motion across the work, and a rotary one, both communicated in a similar way.

FIG. 1.

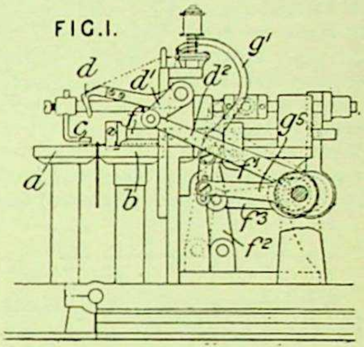


FIG. 4.

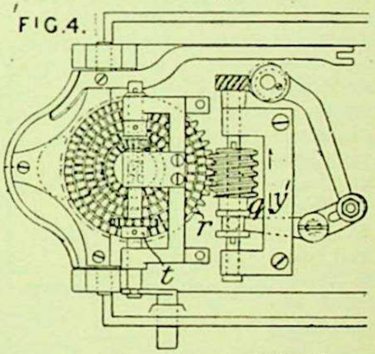
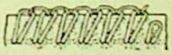


FIG. 6.1

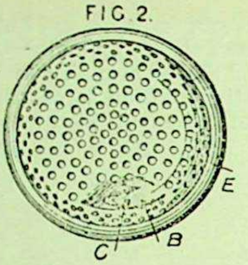


Governing needle thread ; governing under thread.—The looper-thread is governed by an arm g^1 actuated from an eccentric by a rod g^5. The needle thread is governed in a similar way.

Feed ; presser-wheels.—The work is held between wheels a, b which are geared together and intermittently driven. A worm q is splined on its shaft, and during half a revolution is moved in either direction of the arrow y^1 by an eccentric, so as to keep the wheel r, with which it gears, stationary. During the remainder of the revolution it is moved in the opposite direction, thus intermittently driving the wheel r through a tooth. This wheel has a number of circular racks with any one of which a pinion t can be made to gear. The motion of the pinion is communicated by bevel gearing to the shaft of the feeding-wheel b, the movement of which can thus be altered so as to vary the length of stitch. In a modification, a uniform stitch is used.

17,342. Robison, W. C., Gardiner, C. L., and Gardiner, T. H. R. July 4, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].

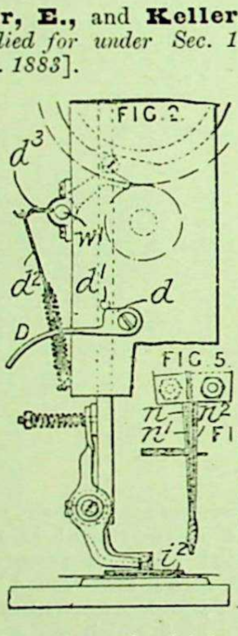
FIG 2.



Thimbles.—Within a recess in the thimble is a thread-cutter having an inner cutting-edge C and with its outer part B conforming to the surface of the thimble, so that there shall be no projecting part to injure the material sewn, or the hand of the operator. Round the bottom of the thimble is a channel E, to protect the hand of the operator from the needle in the event of the latter's slipping.

17,363. Breitinger, E., and Keller, K. June 14, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].

Hem-stitching machines; presser lifted automatically.—The presser i^2, Fig. 2, which is described in connection with a hem-stitching machine, is lifted at every third complete needle stroke and at the period between the catching of the needle-thread loops and the withdrawal of the needles from the material. The mechanism by which this is effected comprises a rock-shaft w^1 actuated by a cam on a wheel which is geared down from the driving-shaft in a ratio of three to one, an arm d^3 on the front end of the shaft w^1 being connected by a rod d^2 to a lever D, a projection d on which engages a pin d^1 on the presser-bar.

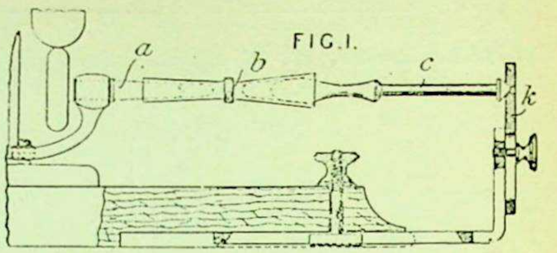


Needles.—In order that the needles n^1, n^2, Fig. 5, which are arranged in a usual manner on either side of the awl n, may lie close to the latter, their points are flattened on the sides next the awl and are bent towards it, Fig. 6.

17,444. Wagner, C. C. M. Aug. 12.

Sewing-machine spools and the like, winding.—Consists in utilizing a sewing-machine for winding bobbins &c. for lace-making and other purposes. The method of carrying the invention into effect is shown in Fig. 1, where the spool c is held between an adjustable support k and a doubly-coned sleeve b, which engages with the ordinary winding-spindle a of the machine. The support k may be somewhat modified.

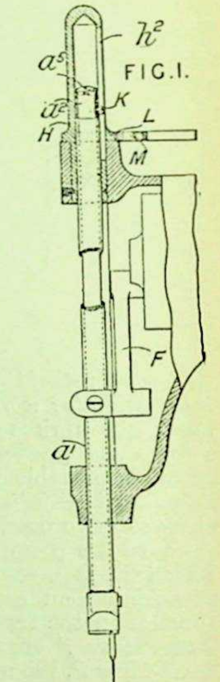
FIG. I.



17,703. Noble, D. Aug. 17.

Ornamental-sewing machines; needle-driving; needle-bars, vibrating laterally; multiple-needle machines.—The needle-bar consists of a tube a^1, which is reciprocated vertically by a link F in the ordinary way, but does not rotate, and a rod a^2 fitting within the tube and secured therein, so as to rise and fall with it, by a screw a^5. The needle is fixed eccentrically in the end of the bar a^2, the upper end of which has a screw K sliding in a slot h^2 in a cap H which receives a reciprocating motion by toothed gearing L, M from a link. The link is adjustably connected with the toothed gearing, and is actuated by a cam on the needle-driving shaft. D, D are rotary hooks with which the needle thread alternately engages as the needle is oscillated by the cam. One lower thread, or more than one needle, may be used.

FIG. I.



18,433. Brookes, A. G., [*Warren, G. E.*]. Aug. 27.

Lock-stitch shuttle sewing-machines; governing needle thread; perforating-devices.—Relates particularly to welt and turn-shoe sewing-machines, and consists of (1) an improved tension-relieving mechanism for the supply thread, (2) a thread hook to control the direction of the pull of the thread, and (3) an improved awl which has no lateral movement while in the seam. The machine shown is mainly of ordinary form, the needle being arranged to enter from the channel side. The take-up, as shown in Fig. 8, is of the ordinary compound form. The tension-governing mechanism is shown in Figs. 2 and 7. The thread passes round the grooved pulley n^2, which is loosely mounted on a stud secured in the framing, and rotates with a ratchet-wheel n^5. This wheel and the pulley are at certain times held stationary by a pawl n^9 actuated by a cam A^2 through a spring-pulled bell crank n^{10}. A sleeve, free to slide on the stud, has at one end a disc n^4 which at certain times is forced against the thread-pulley by a spring n^6. At other times it is withdrawn by a lever *o* actuated by a cam on the face of the disc A^2. The shuttle mechanism may be of ordinary construction, the shuttle having a lateral movement given to it by a cam. The awl is mounted on the feed-slide, and is moved laterally while out of the work. Fig. 5 shows the channel guide, which is formed with a thread hook b^1 to direct the supply thread while being pulled by the shuttle. The needle, after it has pierced the work, has a bight of supply thread thrown on its hook by the looper, and is then retracted, the supply thread running freely through the tension device. While the needle is being withdrawn, the shuttle is moved into the same plane and engages the loop drawn out by the needle, and at the same time a bight of shuttle thread to form the lock. When the bight of the supply thread has reached a position to be drawn off the shuttle, the take-up commences to act, and the tension device is locked by the pawl as stated above. The supply loop is thus drawn into the channel, as indicated in Fig. 8. The needle again pierces the seam, and brings away another loop of supply thread, which is engaged by the shuttle as described. The shuttle in rotating at first draws out the thread through the released tension device, and when the latter is locked by the disc n^4 draws the lock of the previous stitch into its final position.

FIG. 2.

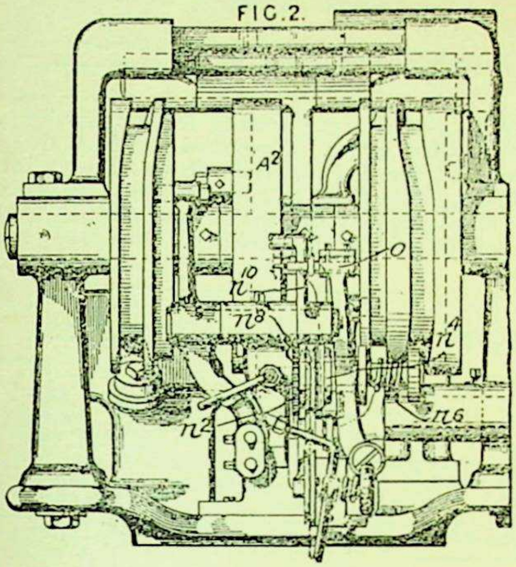


FIG. 8.

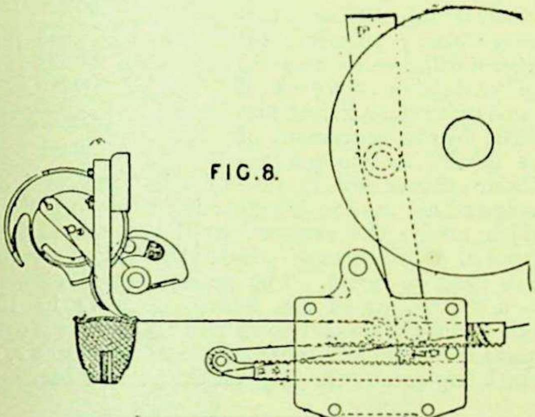


FIG. 5.

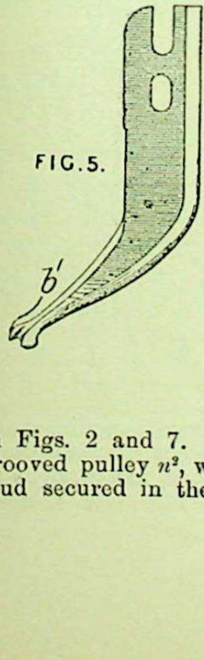
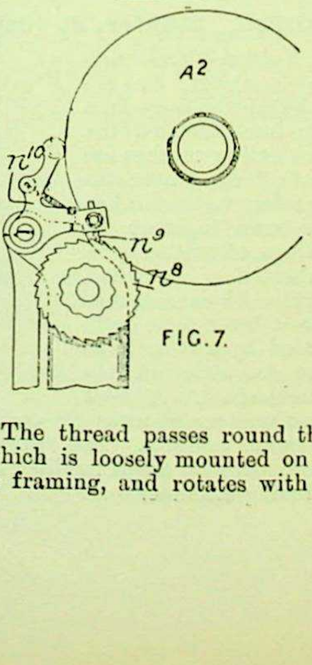


FIG. 7.



18,539. Dixon, S. W., Hunting, J. C., and **Hayden, N. W.** Aug. 30. *Drawings to Specification.*

Pin and like boxes and cases.—A case or cover for a note-book, writing-pad, blotting-pad, calendar, or the like is preferably formed of two pieces of sheet aluminium hinged together. The two halves of the case or cover may be connected by a tubular form of hinge made by bending and suitably shaping the ends of the metal sheets; this tubular portion may be used as a holder for pins or other small articles.

18,663. Beeby, J. E., [Administratrix of *Beeby, F. A.*]. Aug. 31.

Sewing-machines, driving; stopping-gear.—The sewing-machine is driven by a coiled spring *b*, Fig. 4, which is wound up by a treadle-actuated pawl engaging a ratchet-wheel 7, or by turning the spring shaft *f* in the reverse direction. The speed is governed by a brake block *i* pressed against a brake-wheel *h*, and lifted therefrom by a treadle rod *j* or by a hand-lever. The spring shaft is connected by gearing with the main shaft, or, in order to adapt the appliance to existing machines, by means of a coupling. One form of coupling, shown in Fig. 4, consists of a socket 10 on the shaft f into which fits the end of the main shaft p, the two being connected by a pin 11. In a modification, Fig. 8, the pin 11 is hinged so that the small end r can be turned down and secured by a clamp. In another modification, Fig. 11, the pin r which connects the shafts is pivoted to an arm q, and is held in the coupling position by springs u, 2. In another modification, Fig. 14, a split sleeve 3 is used which is slid into contact with a collar 4 when out of use. In a modification, Fig. 10, suitable for light work, the shafts are fitted with plates 11, 12 and spring clasps v, y, which engage when the shafts are pushed together.

FIG.4.

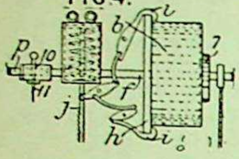


FIG.8

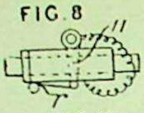


FIG.14

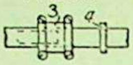


FIG.10

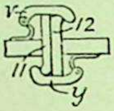
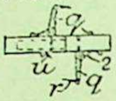


FIG 11.

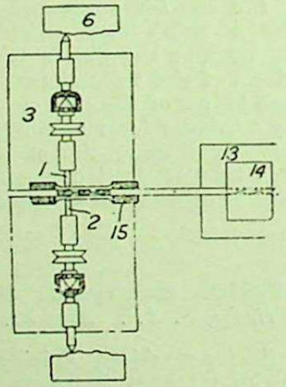


18,957. La Chaux, F. de. Sept. 5.

Embroidery.—Relates to the production of tapestry by embroidery, and consists in the combination in one piece of work of stitches of various styles.

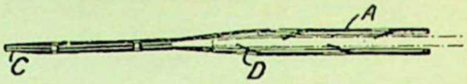
18,963. Heusch, E. Sept. 5.

Sewing-needles.—Consists in an improved method of, and apparatus for, the manufacture of needles. Various operations are performed at different points in a continuous length of wire. Cutters 1, 2, for forming the grooves and part of the eyes, are carried in a slide 3 which receives a motion parallel to the wire, the cam surfaces 6 at the same time producing the necessary transverse motion of the cutters. At points further along the wire the eyes are completed by similar cutters, and the needles separated. During the cutting operation the wire is held by clips 15, and at the end of such operation by clips 13, 14, which engage with the partially-formed grooves &c., thus preventing turning of the wire, and move it forward the length of two needles.



19,352. Scheib, H., and **Dieck, J.** Sept. 12.

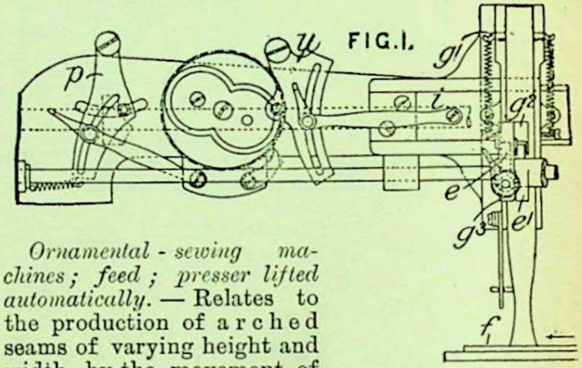
FIG.2



Sewing-needles for sewing leather belting &c. with leather strips. Two steel strips A are connected at one end to form a sharp edge C. Their other ends stand apart, and are formed with barbs D which prevent the withdrawal of the leather lace from between the strips A.

19,372. Alexander, C. J. Sept. 12.

FIG.1.

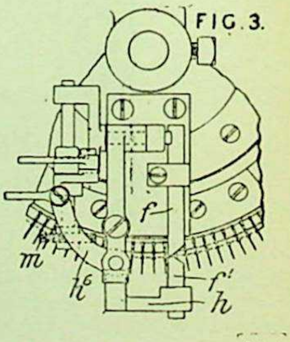


Ornamental - sewing machines; feed; presser lifted automatically. — Relates to the production of arched seams of varying height and width, by the movement of the fabric in two perpendicular planes by means of the presser-foot. Longitudinal motion is transmitted to the slide i, which carries the presser-foot f, through slotted levers p, u by means of which the motion of the slide i can be varied. The presser-bar is pivoted on a pin g^1, which can move vertically in the slide i, and the up and down and transverse movements of the presser-foot are effected by cams e, e^1 which engage an arm g^2, g^3 on the presser-bar.

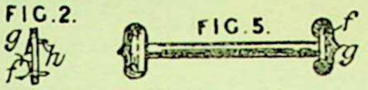
20,725. Köhler, J. Oct. 1.

Knitted-fabric sewing-machines; trimming or cutting.—In a linking-machine, the projecting meshes are cut off close over the meshes to be linked or sewn together, by means of cutters f, f^1, whereof f is fixed, while f^1 is attached to a lever h h^6 oscillated by a link from an eccentric on the main shaft. A brush m for sweeping away the cuttings is oscillated in a similar manner. The invention is also shown applied, with slight modifications, to a straight-bar linking-machine.

FIG.3.

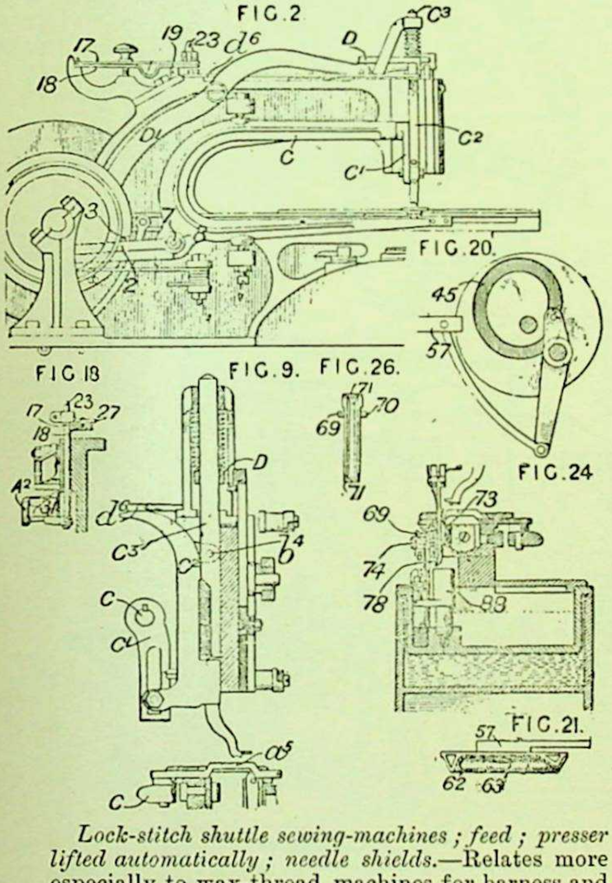


20,727. Marquardt, A. O. H. Oct. 1.



Lock-stitch shuttle sewing-machines.—Suitably-shaped ready-wound reels are adapted for use in shuttles of lock-stitch machines by means of plates *f* attached to their ends. These plates are formed with journals *g*, and may be either temporarily secured to the reels by spikes or the like *h*, Fig. 2, or may be permanently fixed thereto by having parts of their edges bent over the edges of the reels, Fig. 5.

20,997. Lake, H. H., [*Landis Wax Thread Sewing Machine Co.*]. Oct. 5.



Lock-stitch shuttle sewing-machines ; feed ; presser lifted automatically ; needle shields.—Relates more especially to wax-thread machines for harness and other leather goods. The horizontally-oscillated feed-lever C is forked at its front end, and the lower portion of the fork carries the feed-dog a^5, while the presser-bar C^2, Figs. 2 and 9, is loosely connected to the slotted link C^1 secured to the upper portion of the fork, so that the feed-dog and presser-bar receive a simultaneous horizontal movement. The vertical motion of the presser-bar is obtained from a bar C^3 to which it is pivoted at b^4 and which is lifted by means of a loosely-fitting lifting-dog D and cam-actuated lever D^1, and depressed by a spring d^6. The needle passes through a guide, carried by a bar which partakes of the motion of the needle-bar, its downward movement being limited by a stop on the presser-bar. The rear end of the lever C has pivoted to it by a vertical pin 3 a lever 2, one end of which is secured between a spring and adjustable collar 8 on the pin 7 fixed to the lever C, while the other end engages with a cam. Thus, by adjusting the collar 8, the amount of throw of the lever C^1, and consequently the length of the stitch, can be varied.

Governing needle thread.—The tension device consists of two springs 17, 18 fulcrumed at 19 and carrying an arm 27, Fig. 18, secured to a rod 23 which receives its downward motion, to press the springs 17 and 18 together and lock the thread, from a lug 31 on the needle-bar lever A^2.

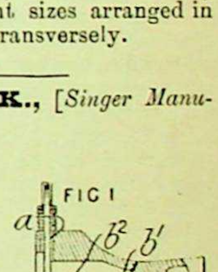
Lock-stitch shuttle sewing-machines.—The shuttle-actuating cam 45 is of the shape shown in Fig. 20. The shuttle-bar 57 is grooved to engage with a guide-rib in the frame. The shuttle-carrier, Fig. 21, is provided with cushions 62 of soft material and a spring 63 to keep the shuttle pressed against the front face of the shuttle-race. A shoe, shown enlarged in Fig. 26, is suspended by pivots 69, 70 with the groove 71 in it engaging the needle, so as to thrust out a loop of thread 73, Fig. 24, for the passage of the shuttle. The position of the shoe can be adjusted by a screw 74.

Waxing thread.—The plunger 78, of the pump which forces the wax into the dipping-well 88, is actuated by a cam lever and a spring.

21,621. Middleton-Taylor, S. Oct. 14.

Thimbles.—The indentations, instead of being all of one size, are of different sizes arranged in series either longitudinally or transversely.

21,875. Macdonald, J. K., [*Singer Manufacturing Co.*]. Oct. 18.



Hat-sewing machines ; binding edges ; work-supports ; frames.—In order to obtain an unobstructed space beneath the work-support and also beneath the horizontal part of the bracket arm, as, for instance, in a machine for binding hats, the said bracket arm A has a downward extension A^1, formed with a projection A^2 which contains the shuttle and shuttle mechanism or their equivalent, and is covered by the work-plate a^2.

Feed ; needle-bars, vibrating laterally ; lock-stitch shuttle sewing-machines.—The work is preferably fed by the needle ; for which purpose the needle-bar passes through a pivoted guide-block *a*, and receives a lateral motion from a lever F actuated by the cam b^2. The cam b^1 oscillates the vertical shaft C, which communicates its motion by a toothed sector to the vertically-pivoted discoidal shuttle (not shown).

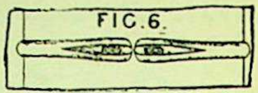


FIG. 6.

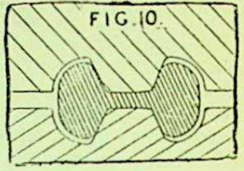


FIG. 10.

21,879. Morgan, J., and Cassell, J. Oct. 18.

Sewing-needles.—Relates to stamping the eye ends of needles. The dies for this purpose are formed with matrices of fully half the depth of the needle head to be produced, and of a width greater than the diameter of the wire to be operated on. All or nearly all the metal displaced is thus gathered up to form the walls of the eyes instead of being forced outwards. The formation of side burrs, and the consequent necessity of "spitting" the blanks, is thus avoided. Fig. 6 shows a plan of one die, and Fig. 10 a section of the two together, with a partly-stamped needle between them.

21,933. Lake, H. H., [*Raymond, F. F.*]. Oct. 18.

Buttonhole - sewing machines ; buttonholes, barring and cutting ; needle-driving ; stopping - gear ; stopping, automatic. — The upper needle, and the lower needle and looper, are carried respectively in the upper and lower brackets of a slide B, which has a travel slightly greater than the length of the buttonhole. The eye is formed by the rotation of the needles, in combination with a lateral motion of the clamps, which have a further lateral motion so as to give the stitching a diagonal direction at the rear end of the buttonhole, and form a bar R, Fig. 33. On raising the starting-lever C^4, Fig. 13, the cam d^1 carried on its spindle closes the clamps d^5, d^4, Fig. 4, while the catch c^{12} releases a clutch which throws the wheel C, driven by a constantly-rotating loose pulley, into gear with the disc C^1, Fig. 9. This clutch comprises a pawl c^{21} carried on the disc C^1, which springs into engagement with one of the shoulders c^{23} on the wheel C when released by the motion of the lever c^{17} produced by the catch c^{12}, and is thrown out of engagement when the disc C^1 has completed one revolution. The disc C^1 operates the cutter-lever c^3, which is connected with the anvil carrier g, which is formed in one with the pivoted ring E^5 carrying

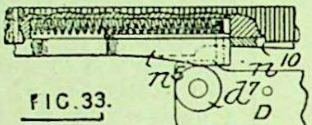


FIG. 24.

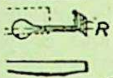


FIG. 33.

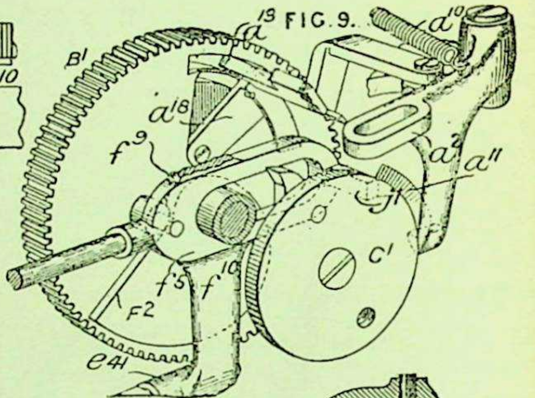


FIG. 9.

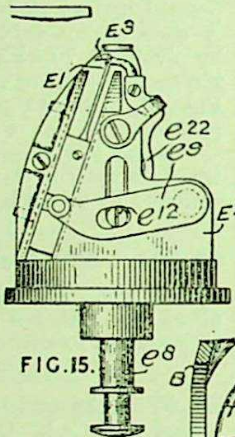


FIG. 15.

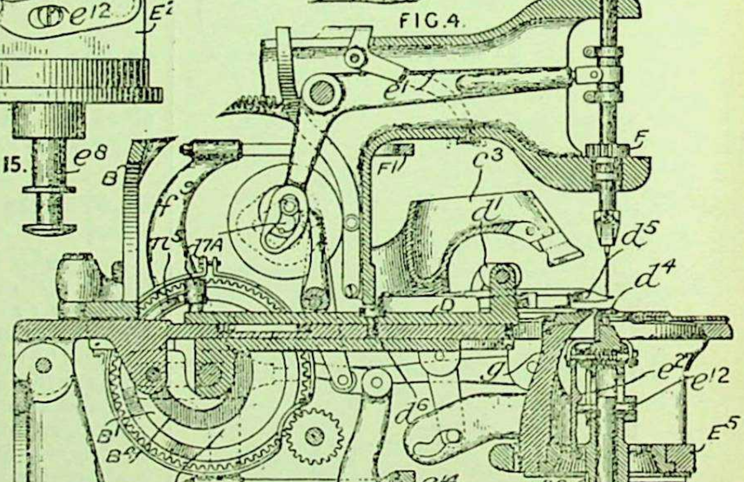


FIG. 4.

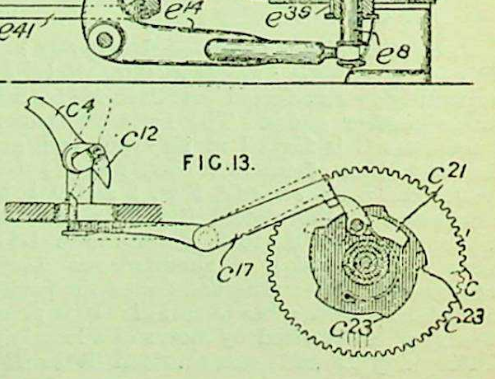


FIG. 13.

the lower needle &c. Thus the motion of the lever c^3 moves the anvil into position, and the lower needle &c. out of the way. The disc C^1 also carries a cam a^{11}, which at the end of its one revolution operates the belt fork a^2, Fig. 9, to shift the belt from the loose pulley to a pulley fast on the shaft A. The shaft A carries cams which operate the upper needle, and the lower needle and looper, through the cranks e^1, e^{14} respectively. The lower needle E^1 and looper E^3, Fig. 15, are carried in a casing E^2 rotatably supported in the ring E^5. The pin e^{12} on the bar e^5, reciprocated by the crank e^{14}, reciprocates the needle E^1 by a lever e^9, and oscillates the looper E^3 by engaging a cam slot in the looper carrier e^{23}. The looper also receives a lateral motion by means of a cam lever e^{27} engaged by the end of the pin e^{12}. The looper takes the loop from the upper needle as this needle is rising from its lowest position, and carries it back to the under needle as the latter is falling, and then holds the loop over the under needle until this needle takes it. The wheel B^1, pivoted in the slide B, has a cam-groove B^4 for the reciprocation of the slide B, and also carries a cam F^2, Fig. 9, which reciprocates a yoke f^5 provided with arms f^9, f^{10} to which are attached the bars F^1, e^{11}. Racks on the front ends of these bars engage pinions F, e^{39} respectively which rotate the two needles and looper. To provide for the lateral motion of the work clamps, the bar D which carries them is pivoted at d^6, and has at its rear end a roller d^7 engaging a cam on the wheel B^1. As the buttonhole nears completion, the roller d^7 following the portion n^{10} of the cam, Fig. 24, which gives the clamps their final lateral movement, pushes before it a movable portion n^5 of the cam. As the bars F, e^{11} rotate the needles to their original position on the completion of the stitching, a dog on the bar e^{11} moves a lever which causes the roller d^7 to leave the cam n^{10}. The part n^5 immediately springs back into place, as shown, thus holding the clamps in their right position for the commencement of another buttonhole. The stitching operation is stopped, when, on the rotation of the wheel B^1, a recess therein, normally covered by the plate a^{18}, comes opposite the arm a^{13} of the belt shifter, Fig. 9, allowing the latter to move under the action of the spring a^{10} to throw the belt on the loose pulley. The wheel C, which is thus again started, carries a cam, not shown, which engages a projection j^1 on the yoke f^5, Fig. 9, thus rapidly rotating the needles &c. back to their original position. The motion of the wheel B^1 is checked by an adjustable band surrounding it.

22,539. Schoneweiss, A., and **Röchling, H.** Oct. 26.

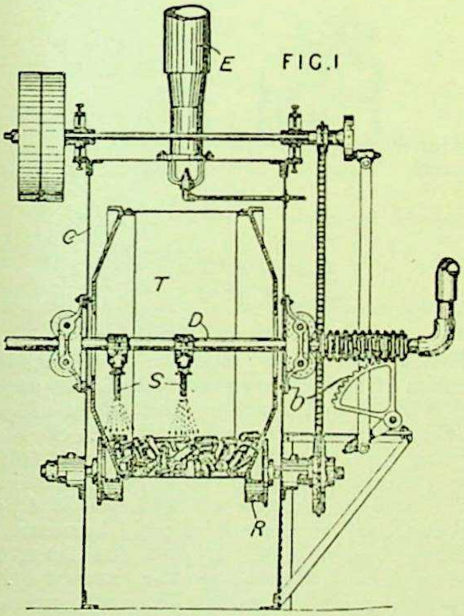


FIG.1

Sewing-needles.—Relates to apparatus for cleaning small castings, applicable also for polishing needles and other articles. The needles are placed in a perforated tumbling barrel T, which is rotated by its supporting-rollers R. An axial pipe D carries sand-blast nozzles S, and is reciprocated by the toothed quadrant *b* so as to distribute the blast. Conical pins are arranged inside the drum to carry the articles round to a convenient height before allowing them to fall. The barrel is enclosed in a casing C, and the dust &c. is carried away by an exhausting-device E.

22,946. Tracy, H. R. Nov. 1.

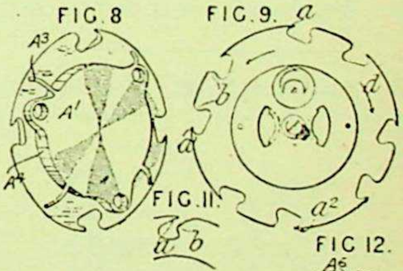


FIG. 8
FIG. 9.
FIG. 11.

FIG 12.

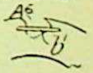


FIG. 12a

Lock-stitch shuttle sewing-machines; chain-stitching.--Relates to machines in which a revolving shuttle or loop-taker is employed. The shuttle or loop-taker has four loop-engaging and four loop-retaining hooks, and is so timed, with reference to the needle, that each preceding loop is drawn tight by the succeeding loop before the needle enters the fabric to make another stitch. Fig. 9 shows a combination shuttle and loop-taker. For lock-stitching, the rotation is in the direction of the arrow *d*, and the engaging-hooks *a*, a^1, a^2 co-act with the retaining-hooks *b* adjacent to them. For chain-stitching, the rotation is in the opposite direction, and the other set of hooks come into action. Instead of the shuttle being grooved to receive the needle, one side of its outer edge may be cut away as shown in Fig. 8, a throw-off bar A^3 being provided to prevent the back part of the needle-thread loop from catching on the edge A^4 of the bobbin case A^1. In order to delay the release of the loop, the loop-retainer *b* may be overlapped by the engaging-hook *a*, Fig. 11, or may be in the form of a bar b^1 extending across the opening A^6, Figs. 12 and 12^a.

22,947. Tracy, H. R. Nov. 1.

FIG.1.

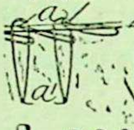


FIG.2.

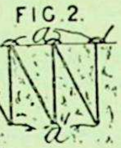
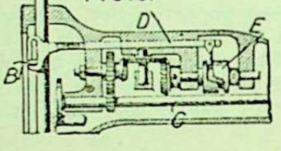


FIG.3.

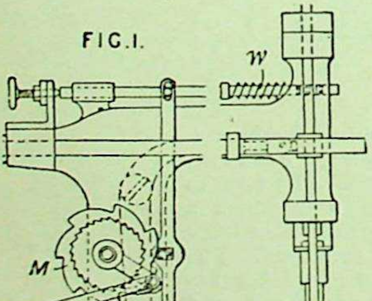


Overedge-stitching machines; ornamental-sewing machines. — Consists of an improved machine overedge-stitching for buttonholing, scalloping, &c., and of a machine for the purpose. Figs. 1 and 2 show opposite sides of a piece of the stitching. It consists of a series of locked chain-stitches, arranged in pairs, one stitch *a* of each pair being at or beyond the edge, and the other a^1 back from it, with the loops enchained as shown.

Needle-bars, vibrating laterally.—The machine employed is preferably of the type described in Specifications No. 15,071, A.D. 1897, and No. 22,946, A.D. 1898. To form the stitches in pairs, the needle is placed eccentrically in the needle-bar, which is oscillated by mechanism such as the cam E geared to the shaft C, rod D, and pin B^1.

23,132. Shillito, T. R., [*Fabrik für Spezialnähmaschinen, A.-G. (Patente Julius Gutmann)*]. Nov. 3.

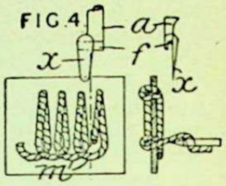
FIG.1.



Embroidery.—In a machine for the production of festoon or ornamental seams, either the needle-bar or the presser-bar is oscillated for this purpose, by a rack-bar *w* actuated by the pattern cam M, which is rotated by ratchet gearing from the main spindle, or, in a modification, from the upper spindle.

23,133. Shillito, T. R., [*Chemnitzer Wirkwaaren Maschinenfabrik vorm. Schubert & Salzer*]. Nov. 3.

FIG.4



Embroidery, machines for. Relates to festoon mechanism for shuttle embroidering-machines. The festoon loops *m* are formed by thread-catchers *a*, one being shown in front and side elevation in Fig. 4, comprising a finger *x* and a rib *f* having between them a slot in which the needle thread is engaged to form the loop on the downward motion of the thread-catcher and upward motion of the work. Mechanism for operating the thread-catchers is illustrated and described.

23,522. Cohn, C. W. Nov. 8.

FIG 2

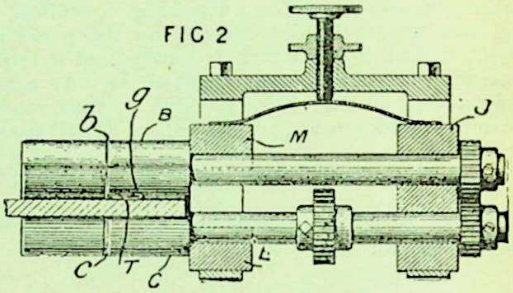


FIG.9.

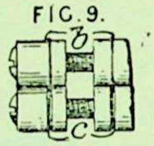
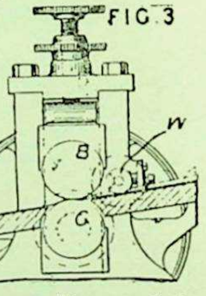
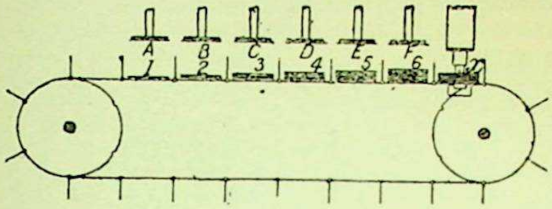


FIG 3



Folding-instruments; marking work for sewing.—Consists of an improved method of, and apparatus for, folding and marking the edges of pocket-handkerchiefs &c. for hemstitching. The crease for the hem is marked, and the gaw folded or simply marked, while the body of the fabric is flat and unfolded. A pair of feed-rolls B, C, geared together, are supported by rigid bearings J and yielding bearings M, L, and are formed with devices *b*, *c* for marking the hem fold. The adjustable guide T is made with or without a folder *g* for the gaw, and a wheel W on a shaft yieldingly supported at a slight angle with the rolls keeps the handkerchief pressed into the guide. The sloping table D, which allows the body of the handkerchief to be spread out flat, is approximately in the plane of the line of contact of the rolls B, C. When the folder *f* is not used, the rolls are fitted with two sets of creasing-devices, the distance between which can be adjusted as shown in Fig. 9.

23,620. Sauvée, A. Nov. 9.



Book-stitching machines.—Relates to means in printing and folding machines for collecting the several sheets or sections of a product for stitching &c. The Figure shows six sheets or sections A, B, C, D, E, F being delivered from the printing and folding apparatus. These are deposited in the compartments 1, 2, 3, 4, 5, 6 of the delivery table, which is moved transversely one step after each delivery of a set of sections, so that each compartment receives a complete set. A stitching-apparatus *x* is provided at one end of the delivery tube. The table may be moved as described in Specification No. 6362, A.D. 1893.

23,653. Flanagan, D. Nov. 10.

FIG. 3.

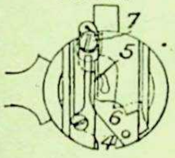
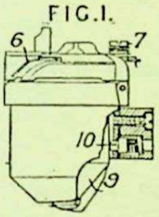


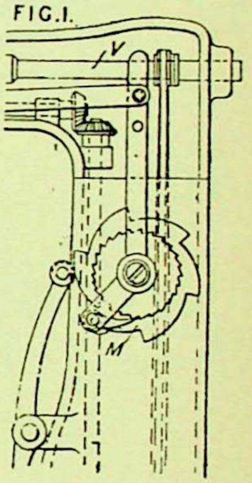
FIG. 1.



Lock-stitch hook sewing-machines.—Relates to the reel case in "two-reel sewing-machines" such as that described in Specification No. 2647, A.D. 1892, in which the needle thread is carried by a hook round a case containing a commercial wooden spool. The thread is introduced into the eye 5, Fig. 3, in the cover of the reel-case holder by pulling it into the V slot 4, one side of which is formed by a spring plate 6 hinged at 7 and normally closing the entrance to the eye. The passage of the thread round the reel case 9 is facilitated by a spring stud 10, Fig. 1, which projects against the case, so as to leave a space between the case and the holder.

23,863. Fabrik für Spezialnähmaschinen, A.-G., (Patente Julius Gutmann). April 25, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].

FIG. 1.



Embroidery, machines for. In order to produce curved seams automatically in an embroidering-machine, the upper and lower stitching-devices have the necessary rotation imparted to them simultaneously and in the same direction, from a pattern cam M, which is rotated from the main shaft V.

23,870. Birch, A. Nov. 12.

FIG. 2.

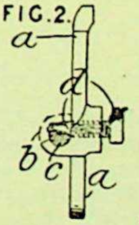
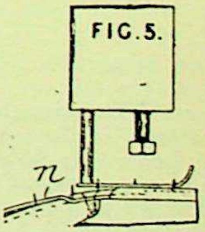


FIG. 5.



Basting-machines ; feed ; presser-feet.—Relates to machines in which the cloth is carried on a feed-ring, and which are used chiefly for sewing pieces of cloth together for printing and other purposes. In order that the hook *a*, Fig. 2, which co-operates with the needle, may be easily replaced, part of its boss is cut away as shown by the dotted line *b*, and the hook is held on the shaft *c* between the remainder of the boss and a conical pointed screw *d*. The usual pins on the feed-ring are dispensed with, and the presser-foot then consists of an endless band carried on pulleys pivoted in a bracket hinged to the needle guide. Where the pins are used, however, the ordinary presser-foot is employed, but the upper end of the stripping-plate *n*, Fig. 5, is prolonged and may be bent as shown, so that it may be secured to a prolongation of the needle-plate with its surface flush with that of the needle-plate.

23,984. Duplessis, E. Nov. 14.

Boot-sole stitching-machines ; leather-sewing machines.—Relates to wax-threaded lock-stitch machines in which, by means of various interchangeable fittings, several kinds of work can be done, such as

McKay, turned shoe, welted work, or edge stitching, and belt or harness sewing. The machine comprises an oscillating frame for the feed-bar or work-guide, as the case may be, a holder for the various presser-bars, interchangeable work-tables, and improved stitch-forming devices.

FIG. 1

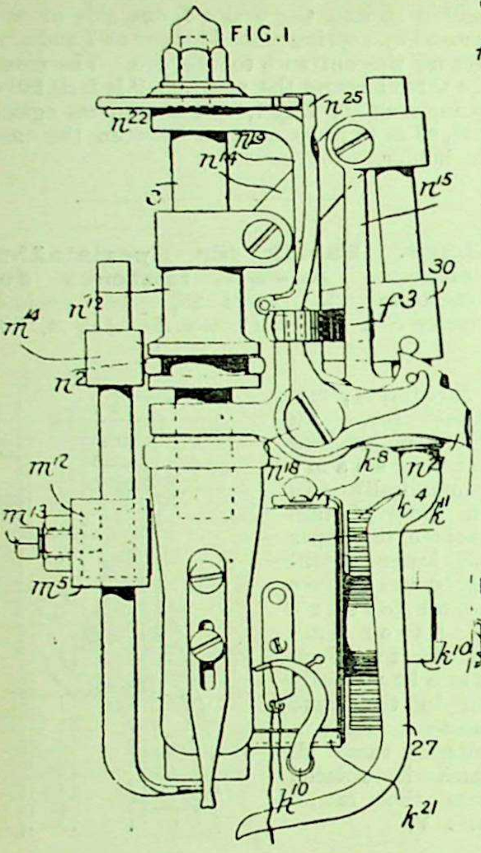


FIG. 4

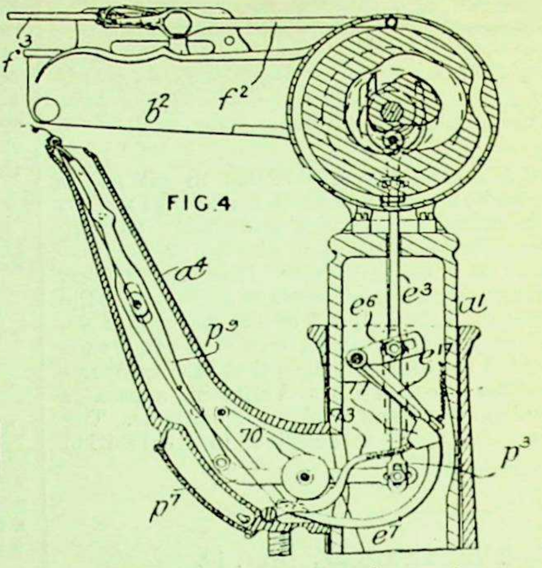


FIG. 17.

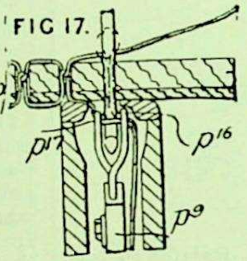


FIG. 10.

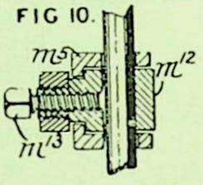


FIG. 30.

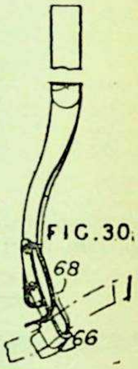


FIG. 31

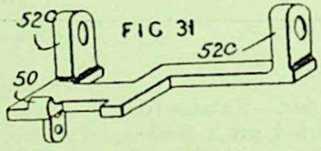


FIG. 29.

FIG. 32.

Frames.—The adjustable pillar a^1, Fig. 4, carrying the horn a^4, has at its upper end a web b^2, carrying most of the mechanism, and a space in which the six disc-cams are supported.

Feed; perforating-devices.—Fig. 1 shows a front view of the head. The feed-bar 27 for McKay work and edge-stitching is cranked as shown. It is secured in a sleeve 30, and slides in a frame n^{15} pivoted at n^{18} to a frame n^{19}, which can swing round the fixed stem c. The frame is oscillated, to give the feed-dog its lateral motion, by a link n^{14} and sleeve n^{12} engaged by a cam lever n^2 of adjustable throw. A lever f^3, yieldingly connected with a cam lever f^2, Fig. 4, effects the vertical movement of the sleeve 30 holding the feed-bar. The frame n^{19} is fixed in any desired position by a spring latch n^{25} engaging a notched plate n^{22} and operated by a handle n^{27}. The curved awl used for welted and turned work and edge-stitching is carried on a segment pivoted in projections 52^c on the work-table, Fig. 31, and operated by a removable cam lever. The feed motion of the awl is effected by a bar connected to the frame n^{19}, its lower end engaging a groove in the awl segment.

Governing needle thread.—The take-up is effected by a bell-crank lever the long arm e^7 of which, Fig. 4, carrying a sheave, projects into the horn, its short arm e^6 being connected by the pin and slot shown to the cam rod e^3. The tension sheave 70 is clamped by a spring lever 73, carrying an adjustable block 77 which is intermittently depressed by a projection e^{17} on the take-up lever.

Needles, hook, threading-devices for.—The threader and thread-puller consists of two spring fingers adapted to receive the needle between them and adjustably fixed to a bar p^9. One ends in a thread eye p^{16}, Fig. 17, and the other in a hook p^{17} which retains the thread temporarily. The bar p^9 is operated by a lever p^7 and cam rod p^3, Fig. 4.

Lock-stitch hooks and hook mechanism.—A loop of thread having been drawn through the work by the needle is seized by a hook h^{10}, Fig. 1, and brought into position to be engaged by the oscillating hook k^8, which draws it round the thread case k^{11}. The rod carrying the hook h^{10} is oscillated through a pinion engaging a rod on the end of a lever operated by one cam, and is guided in a transverse hole in the pivot of this lever so that it can be reciprocated by a second cam. The thread case rests on a bracket k^{21}, and is embraced by a bracket k^{10} in which is pivoted the pinion k^4 carrying the hook k^8 and oscillated by a cam lever. Displacement of the thread case is prevented by the hook k^8 when the latter is in its forward position, and by a bell-crank lever connected with the hook lever when the hook is thrown back.

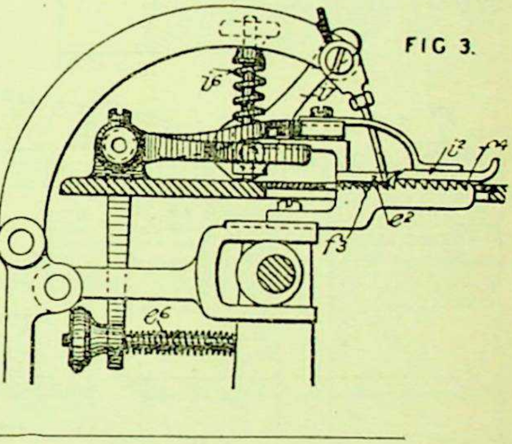
Presser-feet; presser lifted automatically.—The presser-bar is adjustably carried by means of a set-screw m^{13} and swivelling block m^{12}, Figs. 1 and 10, in the outer end of a lever m^5, and slides in an adjustable guide m^{14}. The inner end of the lever m^5 is held up by a spring against a projection on the cam lever which operates it, to allow for varying thickness of work. Figs. 1, 29, and 32 show the form of presser for McKay, welted or turned work, and edge stitching respectively.

Guiding materials; work-supports.—For welted or turned work, the work-guide shown in Fig. 30 is substituted for the feed-bar 27. Its lower half is flattened with rounded end, and to it may be secured a welt-guide consisting of a strip 66 and a triangle of wire 68. The work-support shown in Fig. 31 is also substituted for that used in McKay work. It carries a channel-guide 50 with convex front face and concave rear face. For edge-stitching, a plain work-support is used with a detachable work guide.

24,067. **Lake, H. H.,** [*Industrial Manufacturing Co.*]. Nov. 15.

Knitted-fabric sewing-machines; feed; presser-feet.—In order to prevent stretching at the line of stitching, more especially in the case of knitted or elastic fabrics operated on in an over-seam machine of the kind described in Specification No. 9590, A.D. 1898, the fabric is fed faster towards the needle than from it. For this purpose the feed-dog has a set of coarse teeth f^4 in front of the needle, and, somewhat below them, a set of fine teeth f^3 behind the needle. Of the two corresponding presser-feet, i^2 is controlled by a strong spring i^6, and e^2 by a weaker spring e^6. The presser-foot i^2 may be lifted by the cam handle i^7, and, by means of its bevelled rear edge, at the same time lifts the presser-foot e^2, which has a corresponding bevelled front edge.

FIG 3.

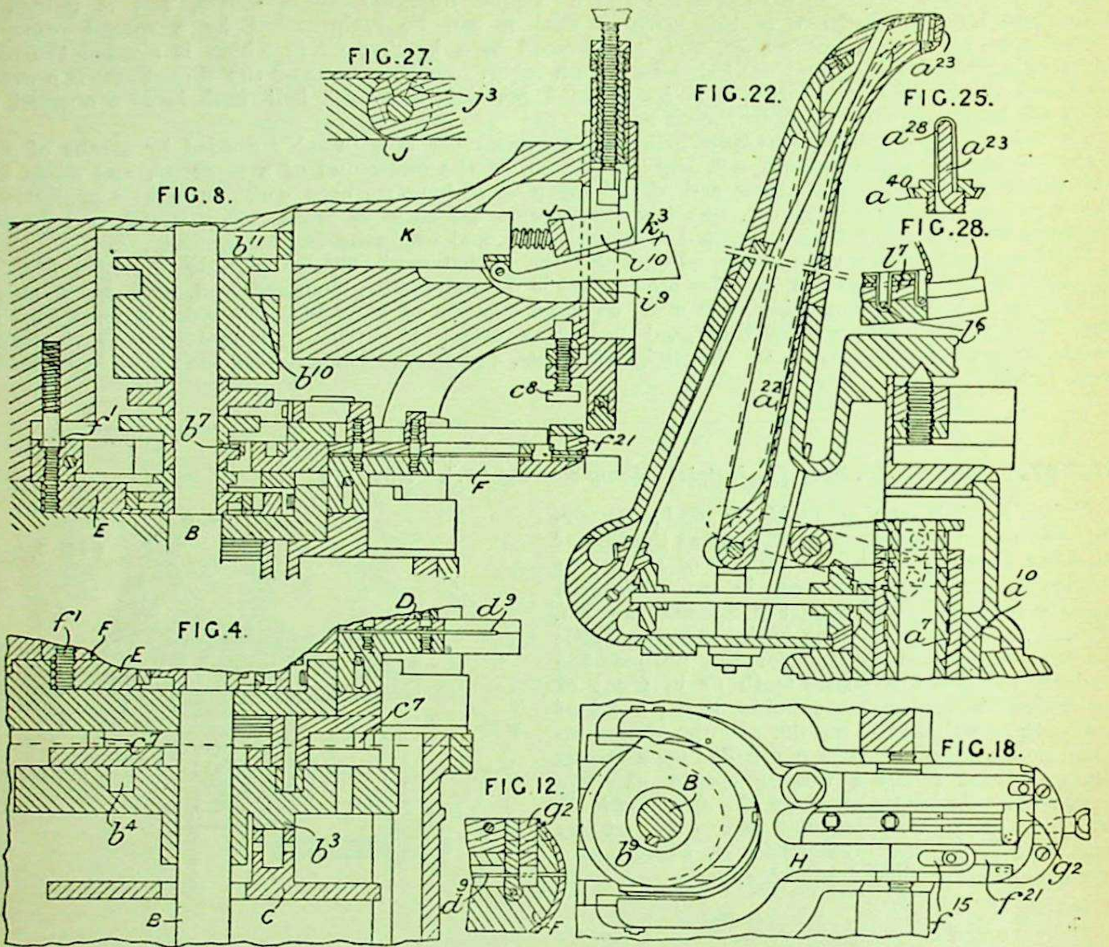


24,639. **Mullarky, M. C.,** and **Kingston, W. H.** Nov. 22.

Boot-sole stitching-machines; lock-stitching machines locking loops by pins.—The parts are stitched together by wire, the loops l^7 of which, Fig. 28, are locked by wire pins l^6. The stitching is done from inside the boot, and after its completion the boot has not to be turned.

Work-supports; needle-holders.—The dustproof work-horn, Fig. 22, is pivoted to the frame. The upright needle a^{23}, of oval section, has grooves a^{28}, Fig. 25, by which the wire passes over it to form the loops l^7. It is screwed loosely into the needle-bar a^{22}, and passes through a bevel-wheel a^{40} which is so geared with a fixed bevel-wheel that the grooves a^{28} always remain in the same plane however the work-horn be turned.

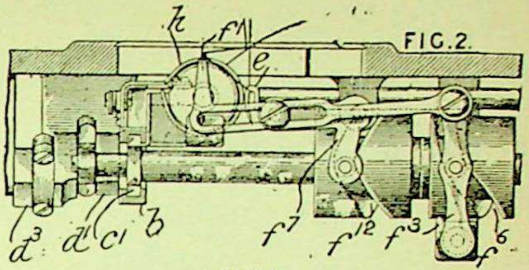
Needle-driving; presser lifted automatically; feed.—The needle-bar a^{22} is guided vertically, and is reciprocated from a whirl a^{10} engaging by a quick screw-thread in a plunger a^7 reciprocated by a cam on the main shaft. The presser-bar is actuated by a lever J and a wedge k^3, Fig. 8, which engage in a slot in a vertically-adjustable part i^9 of the presser-bar. The downward pressure of the lever J is limited by providing a joint in its forward arm kept open by a spring-pressed friction device j^3, Fig. 27. On starting the machine, the cam b^{10}, which, with all the other cams except that for actuating the plunger a^7, is carried on the shaft B, first comes into operation, moving the lever J so that the presser-bar descends. During this motion, the slide K, to which is pivoted the wedge k^3, is held in its extreme right-hand position by the cam b^{11}. When released by this cam it is moved by a spring to the left, locking the presser against the work. The slide K is connected by a rack and gearing with the whirl a^{10}, so that its motion gives a proportionate vertical motion to the whirl a^{10} relatively to the plunger a^7; and the arrangement is such that, when the thickness of the parts to be sewn increases, the correspondingly-decreased motion of the wedge k^3 causes an increase in the stroke of the needle a^{23}, so that the loops l^7 are always extended to within a fixed distance of the outside of the sole. The locking-wire feed and cutting devices, the awl, and the

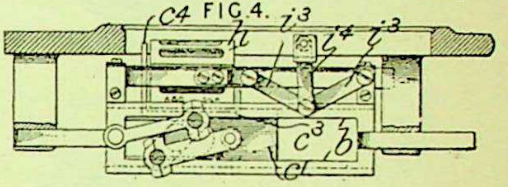


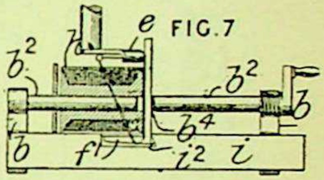
work-feed devices are carried on the lever bar plate F, Figs. 4 and 8, which itself receives a horizontal motion from the plate E to which it is pivoted at f^1, and a vertical motion from pins c^7 on the "shooter frame" C. The awl d^9 is held in a carrier D, Fig. 4, which is reciprocated twice for every revolution of its operating-cam b^4. The wire is fed between grooved rollers by a step-by-step motion into the cutter block g^2, Figs. 12 and 18. The feed-bar f^{15}, Fig. 18, to which is adjustably secured the dog f^{21}, is moved longitudinally by the cam b^7 and transversely through the lever H by the cam b^9. Adjustable or spring faces for engaging the cams are provided where necessary. The downward motion of the "shooter frame" is obtained from the cam b^3, Fig. 4, and its upward motion by springs, the height to which it lifts the plate F being limited by the adjustable stop c^8 on the presser-bar. The operation of the machine is as follows:—On starting, the presser-bar is locked against the work as above described, the vertical needle begins its stroke, and the feed-dog f^{21} is retracted. The plate F then rises, and the wire is fed into the cutter-block g^2. The plate F now moves until it abuts against the sole, and the awl d^9 penetrates the loop just left by the vertical needle, and as it is withdrawn the cutter-block g^2, containing a locking-pin, is moved into alignment with it, and the pin is then inserted on the second motion of the awl. The plate F now moves down and to the left, and the dog f^{21} is moved into contact with the sole, ready to feed the work as soon as the presser is lifted by the lever J.

24,656. **Vannette, J.**, and **Yingling, C. J.** Nov. 22.

Lock-stitch hook sewing-machines in which the under thread is carried by an ordinary commercial spool. The spool and spool case h are supported on the pins b^2 of a frame b, in which is guided a second frame c^1 having arms c^3, c^4 to reciprocate the spool. The two frames are reciprocated in opposite directions from two cranks d^1, d^3 on the side remote from the spool. The needle-thread loop is seized by a hook e having a flat triangular blade and expanded so that one side can be engaged by the hook f^1 by which the loop is drawn through the gap b^4 between the pins b^2 and round the case h. The spool and case are now passed through the loop, which is moved in the opposite direction by the hook e and a hook i^2 on a plate i, which may be attached to the frame b or actuated therefrom by the links i^3, i^4, Fig. 4. The plate i slides in a groove in the spool case, which is thus steadied. On the gap b^4 being exposed at the rear end of the spool case, the loop is drawn off. The hook f^1 is moved in a more or less circular path by the cams f^6, f^{12} and levers f^3, f^7. Cases, externally of the same size, are made of varying internal diameter and length to accommodate different sized spools, and are marked on the outside to denote the particular kind, size, &c. of spool for which they are intended.





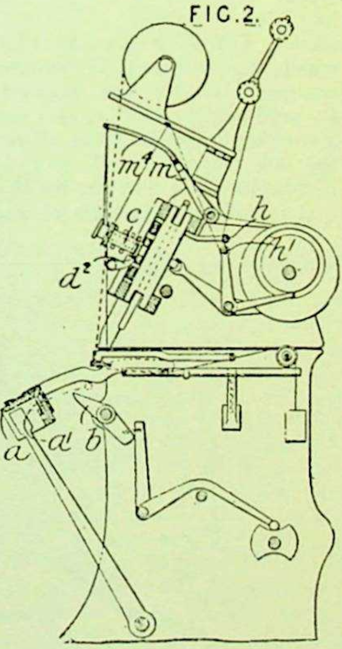


24,672. **Welch, C.** Nov. 22.

Book-stitching machines. — Consists of detailed improvements more particularly in machines of the kind described in Specification No. 11,673, A.D. 1895. To avoid twisting the thread, two independent central needles are used instead of one, each co-operating with one of the outside needles.

Governing needle thread.—The take-off device consists of a fixed bar h, and a bar h^1 carried by bell-crank cam levers. The take-up for each pair of threads is effected by a single lever m, directly actuated by its cam, and having a forked end m^4 so as to carry two thread sheaves. The needle threads pass through tension devices c, of which one only is shown, arranged in two pairs corresponding to the two pairs of needles and independently actuated by cam arms d^2. The threads are thus released, while the loopers are operating, but gripped while the take-up and take-off are effected.

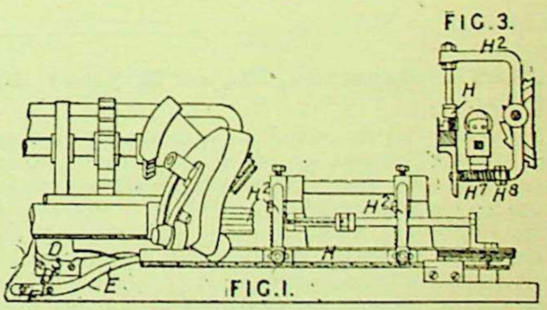
FIG.2.



Work-supports.—The table a is securely held during the operation of the needles by cam levers b engaging with pins a^1.

24,793. **MacDonald, D. J.** Nov. 24

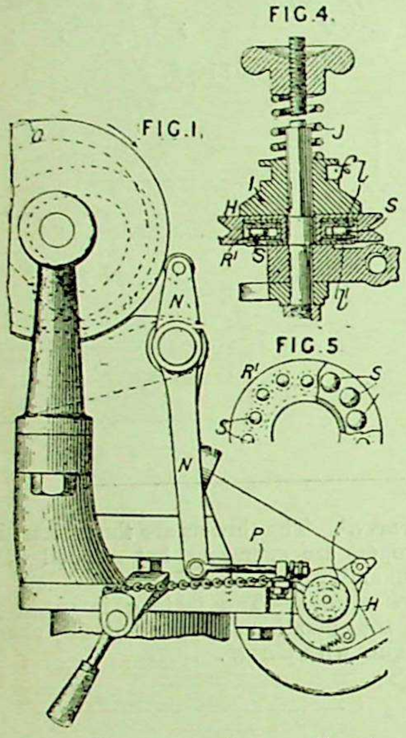
FIG.3.



Revolving-needle machines ; folding-attachments.—Helical-needle overedge-stitching machines, such as that described in Specification No. 2856, A.D. 1878, and used for sack sewing, are adapted for hand-stitch hemming by means of an improved hemming-guide. Fig. 1 shows the machine in plan. The guide consists of a pair of twisted blades D fixed to the machine at the entering end by a flange D^3. It may be used alone or with a spring finger E fixed to the machine at E^1.

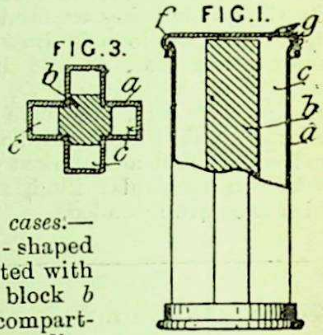
Presser-feet.—In order to take the increased thickness of material, the presser-bar H is made to rise as a whole by being connected to two similar spring levers H², Figs. 1 and 3. The springs H⁷, and the rods supporting the presser-bar, are adjustable.

24,853. Lake, H. H., [*Bertrand, J. E.*]. Nov. 24.



Sewing-machines, governing needle thread in.—An improved tension device is shown as applied to a wax-thread boot-sole stitching-machine, similar to that described in Specification No. 15,309, A.D. 1898. The tension wheel H is pressed by a collar I and a spring J against a friction device consisting of a ring R¹ carrying balls S in separate bearings and at various distances from its centre, Fig. 5, the ring and balls being enclosed between two steel washers *l*, *l*¹. The collar I is moved to relieve the tension when the needle is drawing thread, by an elbow-lever, one end of which engages in the slot *f*, its other end being actuated from the cam O through the lever N and a rod P.

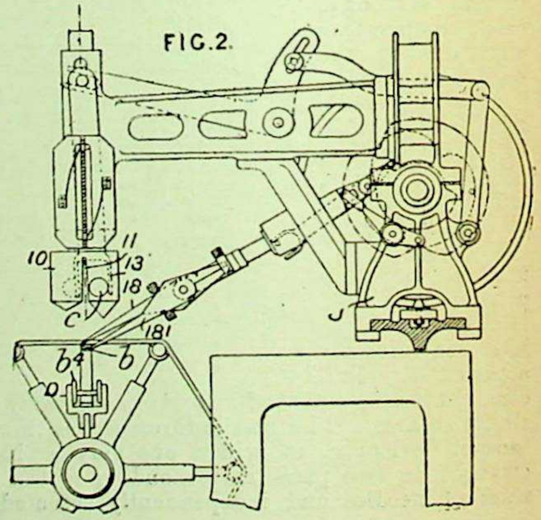
24,943. Koch, K. F., and **Schmiedeken, G.** Nov. 25.



Needle cases.—The cross-shaped case *a* is fitted with a central block *b* to form compartments *c* for needles, say, of different sizes. The lid *f* is provided with an aperture *g*, which, by rotation, is brought over a particular compartment for the withdrawal of the needles. In modifications, the case *a* may be surrounded by a circular casing to form additional compartments; the lid may be fixed, and fitted with an inner revoluble disc; and the lid may have an index and dial to indicate the sizes of the needles.

24,997. Baumann, M., and **Kryszat, A.** Nov. 26.

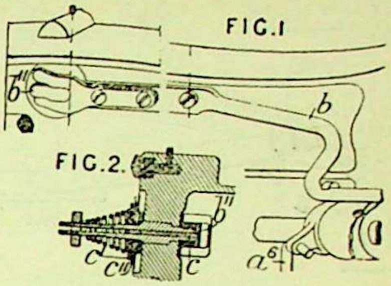
Tying or knotting.—Relates to means for binding or securing hanks or skeins of yarn or other material. An under thread *b* is stretched beneath the skeins to be secured, the bobbin *b*⁴ being held in a carriage D, which is moved intermittently by means of a ratchet arrangement, each time the tying or knotting operation is performed. The remaining parts of the apparatus are carried by a sliding frame J, which is also slid longitudinally in a step-by-step fashion during the interval between successive knotting operations. This mechanism comprises a pair of pivoted fingers or hooks 18, 18¹, which move longitudinally so as to engage with the lower thread *b*, cross one another, and rotate upon their axis so as to form a loop in the thread. The upper thread is wound on a spool *c* in a vertically-reciprocating box-shaped holder 10, in which the spool can be moved transversely by a forked lever 13. During the descent of the holder 10,



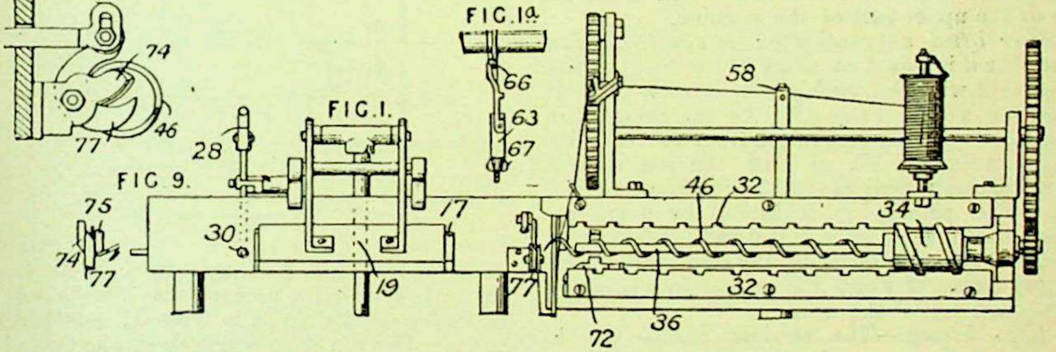
the doubled portion of the loop in the lower thread passes into a central slot 11 in the holder. When the holder 10 is in its lowest position, the spool *c* is moved transversely beneath the doubled thread *b*, and when in its highest position it is moved transversely in the opposite direction, whereby the upper thread is folded round the doubled portion of the loop in the lower thread. The lower thread is subsequently released from the fingers 18, 18^1, and drawn tight by a spring or other tension device. The upper thread may be passed as many times as desired through the loop of the lower thread.

25,178. **Wheeler, S. H.** Nov. 29.

Buttonhole-sewing machines; overedge-stitching machines; governing needle thread.—Consists of means for automatically changing the tension of the needle thread in a machine for overseaming a given figure, so that, in a buttonhole-sewing machine for example, the tension of the needle thread may be reduced to facilitate the sewing of the bar. The rotating feed-disc (not shown) carries a cam, which, when the bar is to be formed, depresses the rod a^6, thus rocking the lever *b* through the connection shown, and causing the spring b^{11} to press on the rod *c*, Fig. 2, and so relieve the pressure of the washer c^1 on the thread disc c^{11}.



25,469. **Crook, J.,** and **Whitehead, E.** Aug. 20, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].



Sack-seaming machines; revolving-needle machines; governing needle thread.—Consists of an improved machine for sewing up sacks filled with sugar, flour, grain, &c. Fig. 1 shows the upper part of the machine. The helical needle 46 is fixed to a head 34, which slides non-rotatively on a shaft 36 and has a screw-thread of the same pitch as the needle engaging in corresponding slots in plates 32. The mouth of the sack is held between the lower edges of semicircular jaws 17, 19, which, when closed, form a guide for the needle. The thread passes from the bobbin round a pulley on a tension slide 58 normally pulled to the rear of the machine by a weight, thence through guides to the needle-eye, and round a pulley 66 on the slide 63, Fig. 1^a, to the thread-end holder and cutter. The slide 58 takes up the slack, and the slide 63 is drawn down to the stop nut 67 to measure off, before starting, the required length of thread. On rotating the shaft 36, the needle penetrates the sack, the weight of the slide 63, which is lifted as the needle advances, preventing the thread from slipping through the needle-eye. The thread above the needle-eye is laid in a groove round the periphery of the needle, that below being drawn in a straight line through the holes made by the needle. Near the end of the forward stroke the wedge 72 engages a projection on the slide 63, lifting it still higher, and the thread end is released. The corner of the sack is then pushed through the loop of thread at the end of the needle to form an ear by a rod 30 connected with a lever 28. On the needle being now withdrawn, the thread is retained by this ear and tightened along the sack by the take-up slide 58. Near the end of the return stroke the thread is cut and held ready for the next stroke, and the slide 63 is released. The wedge 72, and also the thread cutter and holder, are operated by tappets from the head 34.

Thread-cutters; thread-end holders.—One edge of the movable blade 77, Figs. 4 and 9, of the curved shape shown, co-acts with the fixed cutter 74 to cut the thread, and the other with a rounded blade 75 to hold the end of the cut thread.

25,589. Dorman, W. H. Dec. 5.

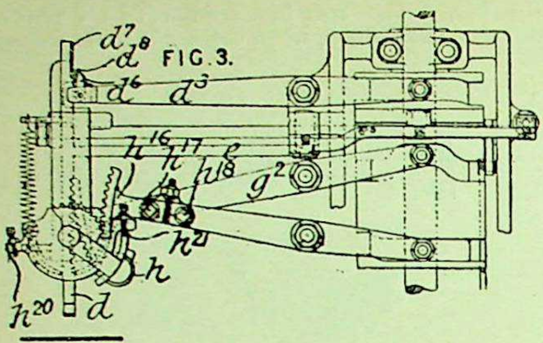


FIG.12.

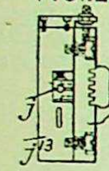


FIG.15.

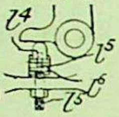


FIG.16.

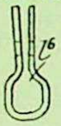
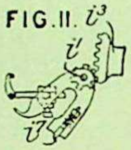


FIG.II.



Leather-sewing machines; wax-thread machines.—Relates chiefly to machines for sewing boot uppers, harness, and other leatherwork. Fig. 3 shows some of the upper part of the machine.

Presser lifted automatically; presser-feet.—The presser-bar d is raised to allow of the feed by the engagement with the teeth d^7 on it of a pawl d^6 carried on a cam lever d^3. As the presser-bar descends, the pawl is withdrawn from the teeth by a fixed projection d^8, so that the presser-foot accommodates variations in the thickness of the work. The presser-bar is locked by a spring-pressed bar e, which is automatically released by a cam, and is also released by the cam end of the lever, by means of which the presser-foot is raised for the insertion of the work.

Needle-driving.—The straight needle-bar is reciprocated by means of a cam lever g^2 having a toothed segment which engages teeth on the needle-bar.

Lock-stitch shuttle mechanism.—The tooth segment h^{16}, by which the shuttle is oscillated, can be adjusted on its cam lever by screws h^{17}, h^{18} to set the shuttle h with regard to the needle, and the throw of the shuttle is limited by adjustable stops h^{20}, h^{21}.

Feed; perforating-devices.—The awl j, Fig. 12, is reciprocated vertically, in the same way as the needle, in a guide connected with a horizontal feed-slide j^{13}, which is actuated by a second cam lever j^7 with toothed segment. The awl is set relatively to the needle by adjusting the feed-slide upon the rack j^8, by which the feed motion is transmitted from the feed-lever j^7.

Governing needle thread; needles, hook, threading-devices for.—The take-up consists of three fixed thread trucks and two moving ones, the latter being carried on a slide operated from a cam and lever through an adjustable link-and-slot connection. A thread hook, a threader, and a thread lock are also described, but not claimed. The thread hook is formed on an arm i^1, Fig. 11, operated by a cam lever i^3, and the spring piece i^7 formed on the same arm pushes the thread into the needle hook. The thread is locked between the end of a U spring l^6, Figs. 15 and 16, carried on a set-screw l^5 and compressed by a thimble l^4 operated by a cam-lever.

26,421. Macdonald, J. K., [*Singer Manufacturing Co.*]. Dec. 14.

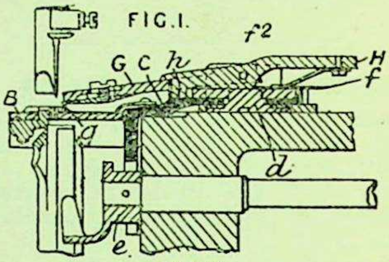
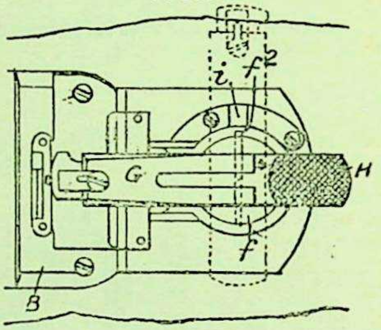


FIG.2.

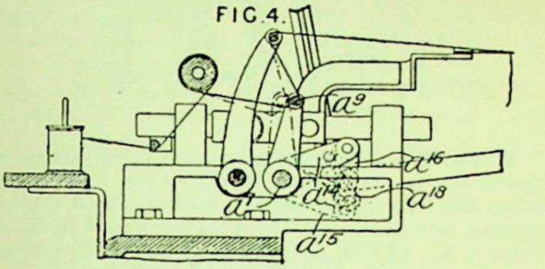


Sewing-machines, trimming or cutting in.—The plate B, detachably secured to the machine, has vertically pivoted to it a lever C oscillated by a cam e. The pin d, on which the lever C is pivoted, carries a turret f, to which is pivoted by the pin f^2 the lever G carrying the cutter g and held in its working position by a spring. On the pin f^2 is also pivoted the lever H, a lug h on which engages in a hole in the lever C, to lock the levers G and C together, and in the slot i when the cutter is thrown out of action, as shown by the dotted lines in Fig. 2. In a modification, the lever H is dispensed with, and the lever G engages directly with a lug on the lever C.

26,429. Entwisle, J., [*Kursheedt Manufacturing Co.*]. Dec. 14.

Embroidery, machines for. In order to prevent thread from being drawn when the work is moved away from the needles for boring or other operations, a device is provided which slackens the threads, and, when the work is returned to the needles, again draws the threads tight. On the shaft a^7 carrying the secondary take-up wire a^9 are fast and loose arms a^{15}, a^{14}. The loose arm a^{14}, which is operated from a cam through an adjustable pin-and-slot connection, is connected with the fast arm a^{15} by toggle links a^{16}, a^{18} which, when the needles are operating, are straight. On the work being moved from the needles, the toggle is flexed, thus moving the wire a^9 so as to let out the threads. The position of the toggle is preferably controlled from the part of the machine which starts the disconnecting-mechanism under the control of jacquard mechanism such as described in Specification No. 26,014, A.D. 1897. Specification No. 21,361, A.D. 1894, is also referred to.

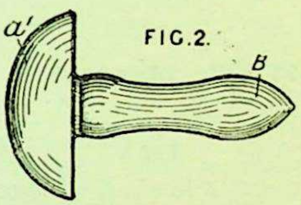
FIG. 4.



26,758. **Kaiser, H. F.** Dec. 19.

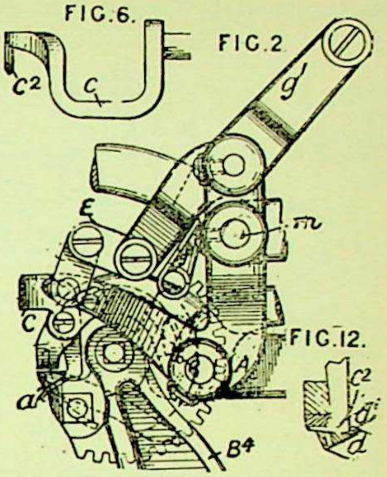
Darning; needle and like cases.—The sock or other article is held by the hand against the handle B, so that the part to be darned is stretched over the head a^1. The handle B is screwed or tightly fitted into the head a^1, or is formed in one with it, and it may be made hollow to contain needles or the like.

FIG. 2.



26,799. **Brookes, A. G.,** [*International Goodyear Shoe Machinery Co.*]. Dec. 20.

Boot-sole stitching-machines; marking-attachments; work-supports.—Consists of means for actuating a stitch separating and indenting tool independently of any of the stitch-forming devices. The invention is of general application, but is shown applied to a Goodyear boot-sole stitching-machine, having a curved needle, and a curved awl a^2 carried in a feed-slide B^4. A bracket A, secured to extensions of the pins e, m on which are pivoted the presser and take-up levers respectively, has pivoted to it a lever g^1 actuated by a cam on the main shaft and connected by a link E to the lever C. This lever C, which is curved as shown in plan, Fig. 6, carries the separating and indenting tool C^2, which normally lies below the work in the recess d^1 of the work-support d, Fig. 12. On a stitch having been set, the lever C turns so that the tool C^2 moves upwardly and to the left into the space between the last-formed stitch and the next partially-formed one, or between the last two complete stitches.



26,800. **Brookes, A. G.,** [*Hadaway, J. B.*]. Dec. 20.

Boot-sole stitching-machines; marking-attachments.—Relates to means for separating and indenting stitches in connection with boot or shoe sewing machines, and is designed to prevent the stitches from being cut or damaged when the length of stitch varies. The separating and indenting tool b^1 is loosely pivoted to the tool bar at b^2, and is normally held in a predetermined position with regard to the awl by means of a spring c, secured to the tool at c^3. Thus, when a stitch varies from the standard length and the tool b^1 on descending therefor comes in contact with the shoulder of the stitch, it can be pushed by this shoulder into its correct position between the two stitches. The spring c is adjustably secured to the tool b^1, so that the normal distance of the tool from the awl may be varied.

FIG. 2.

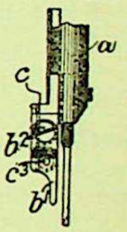
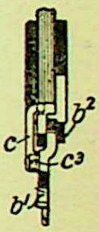


FIG. 3.



27,017. **Humphrey, G.** Dec. 21.

Straw-plait sewing-machines.—Consists of improvements especially applicable to machines of the kind described in Specification No. 14,433, A.D. 1893.

Feed; presser lifted automatically.—The block o^1, sliding in a slot in the feed-block k and embracing the eccentric o which effects the vertical motion of the feed-block, is connected by a rod l to toggle-levers s normally held straight by a spring u. A roller r carried by the block k intermittently bends the levers s, thus pulling down the rod t and causing the more rapid withdrawal of the feed-dog i after feeding the work. The lever 2 which carries the presser-foot j has a hollow projection 3 containing a guide-rod and holding-down spring. The presser-foot is lifted by the engagement of the block k with a roller on the lever 2.

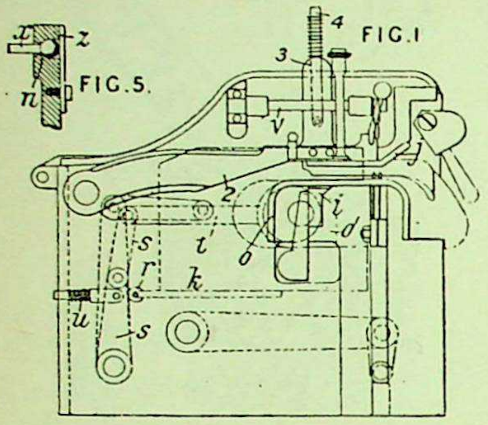


FIG. 5. FIG. 1

Needles, hook, threading-devices for.—The rod x, which connects the threader shaft v to its operating-lever, is connected to this last by a ball joint, Fig. 5, in which the ball is retained in position between a neck n and a spring.

27,182. **Lachman, M.**, and **Hunt, C. B.** Dec. 23.

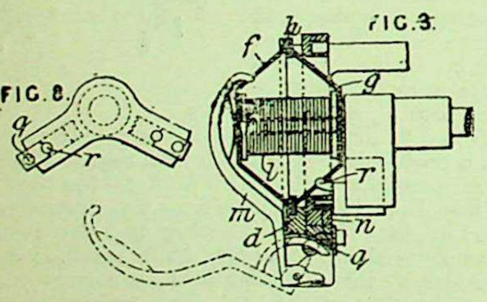


FIG. 8. FIG. 3.

Lock-stitch shuttle sewing-machines.—The locking-thread reel case consists of two parts f, g, containing pins on which the reel l is mounted. The base of the part f fits into a flange h on the base of the part g. This flange, which is thus situated centrally of the case, carries the shuttle hook. The part g, carried by a race d in which the flange h is mounted, is rotated, the part f being prevented from rotation by a spring finger m. The driver, Fig. 8, consists of two arms carrying slides each provided with two pins q, r. The pins q engage in a fixed cam n, so as to withdraw the pins r from engagement with the shuttle as required to let the thread pass.

27,231. **Macdonald, J. K.**, [*Singer Manufacturing Co.*]. Dec. 24.

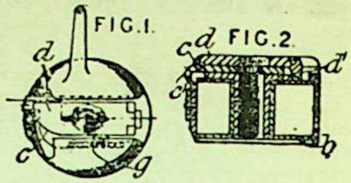


FIG. 1. FIG. 2.

Lock-stitch shuttle sewing-machines.—Consists of means for retaining the bobbin in the bobbin case when the latter is out of the machine, and may be applied to a shuttle of the kind described in Specification No. 14,124, A.D. 1890. The spring-pressed slide C, which is normally held by a spring g in engagement with a pin on the shuttle to retain the bobbin case in the shuttle, as described in Specification No. 7360, A.D. 1896, is provided with a projection c^1, which locks against the bobbin b when the slide c is moved to the right to allow the removal of the bobbin case from the shuttle. This motion of the slide c is effected by raising the lever d, pivoted to it, and provided with a toe d^1 which engages with the bobbin case. In modifications, the part c is operated directly, the lever d being dispensed with. In one of these modifications, the part c is pivoted to the bobbin case, instead of sliding in it.

27,232. **Macdonald, J. K.**, [*Singer Manufacturing Co.*]. Dec. 24.

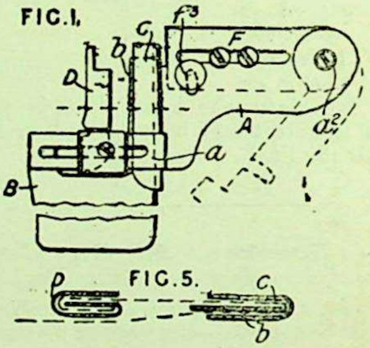


FIG. 1. FIG. 5.

Sewing-machine folding-attachments for hemming. Fig. 1 shows a plan, and Fig. 5 an enlarged section. The supporting-plate A is provided with a bridge-piece a carrying a guide-plate B, which extends in front of the piece a and has a part b extending in the opposite direction within the doubled guide C. The edge-turner D is laterally adjustable on the bridge-piece a. The plate A is pivoted at a^2 to the base-plate F secured to the work-plate, so that the hemmer may be swung out of the way when not required, by loosening the milled nut f^3 which holds it in working position.

27,344. Philipsborn, A. Dec. 27.

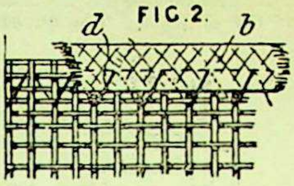


FIG. 2.

Seams.—Binding or trimming *b* is secured to the edges of lace curtains and similar fabrics by zig-zag or like stitches *d*, instead of by a straight seam. Both warp and weft threads of the curtain are thus bound, and a stronger attachment of the trimming &c. ensured.

27,555. Gare, T. Dec. 31.

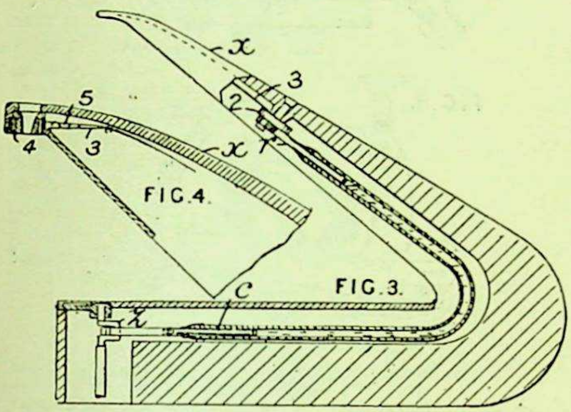


FIG. 4.

FIG. 3.

Boot - sole stitching - machines; needles, hook, threading-devices for.—Relates to means for transmitting motion to the working parts in shoe-sewing and other machines, by means of a liquid column. Applied to the whirl in the horn of a shoe-sewing machine, Fig. 3, the piston *c* is hinged to the crank *z* and the piston *r* at the other end of the liquid column to a double-armed lever 2 pivoted to the horn and attached to the two ends of a band 3, Fig. 4, passed round the whirl 4 and formed with indents 5 to engage in corresponding recesses formed in the whirl.

27,585. Gammons, W. P. Dec. 31.

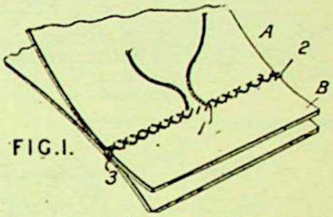


FIG. 1.

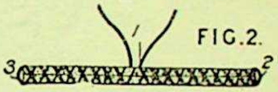


FIG. 2.

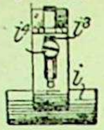
Seams.—Relates to seams for sewed articles. The invention is described in its application for joining together the ends of a hat binding, the object being to prevent the stitches from being exposed when the binding is stretched over the edge of a stiff hat brim. Fig. 1 is a perspective view showing the seam, and Fig. 2 a vertical section through it. The stitches start at a point 1, about midway in the width of the pieces which are to be joined together, and are then continued to and slightly beyond one edge 2, then in an opposite direction to and slightly beyond the other edge 3, and then back to the point of commencement. After the formation of the seam the ends B are ironed back on to the main portion A of the binding.

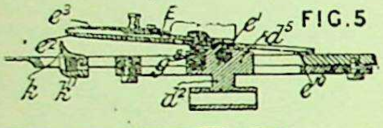
A.D. 1899.

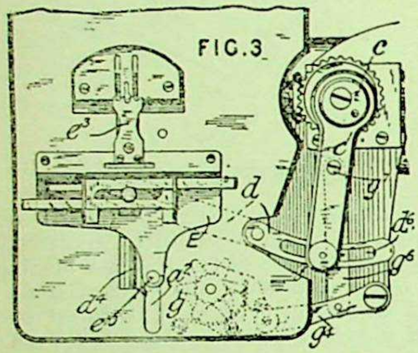
239. Macdonald, J. K., [*Singer Manufacturing Co.*]. Jan. 5.

Sewing-machine folding - attachments.—Relates to plaiting-attachments for producing right or left hand knife plaiting or single or double box plaiting. The plaiting-blades e^3, e^2, between which the work passes, are at the front of a carriage E pivoted at e^1 to a block d^5 sliding on a guide-rod d^4, and reciprocated from an eccentric c through a rod c^1 and slotted lever d which engages a neck d^2 of the block d^5. The curved slot d^6 enables the throw of the carriage E to be varied. A spring g^8 normally holds the blades e^2, e^3 in their raised position, and depresses the pin e^{10} through a slot a^2 in the work-plate. The end of the pin e^{10} is bevelled so that it may be raised by a lever which is intermittently thrust against it by the cam-wheel g, so that, in box plaiting, the carriage E may make a forward and backward movement with the blades e^2, e^3 raised, followed by two similar movements with the blades lowered. The cam-wheel g is rotated by ratchet gearing through links g^4, g^6 from a pin g^7 on the rod c^1. The wheel g is thrown out of action for knife plaiting by removing the pin g^7. In order to ensure perfect folds when the blades e^2, e^3 are in their lower position, a work lifter is provided, consisting of a dog k pressed upwards by a spring, and pivoted to a slide k^1 adjustable in the line of motion of the carriage E.

FIG. 9.







Presser-feet.—The presser-foot is provided with a wide upwardly-curved toe portion i adjustable from or towards the plaiting-blades by means of a slot i^3 and screw i^4.

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263. Lake, H. H., [*Bertrand, J. E.*]. Jan. 5.

Boot-sole stitching-machines ; wax-thread machines ; lock-stitch shuttle sewing-machines ; governing under thread ; needles ; needle driving. — The shuttle, Figs. 24 and 27, is oscillated in a fixed race through three-quarters of a revolution in each direction by a cam-operated rack and pinion. The hook r^5 projects beyond the rear face and beyond the periphery of the shuttle. A boss r^6 expands the loop, and assists the discharge of the thread from the needle at the end of the forward motion of the shuttle. The thread is delivered from the bobbin through a hole 9 covered by a spring, and passes to an eye s^2 on the axis of the shuttle, the arrangement being such that the line between the hole 9 and the eye s^2 is vertical at the end of the forward motion of the shuttle. The curved hooked needle is operated so as to rest at the end of each stroke, and on its convex side has a groove k^2, Fig. 18, which retains the thread in such a position that, when the needle is at the top of its stroke, the loop is slightly spread.

FIG. 3.

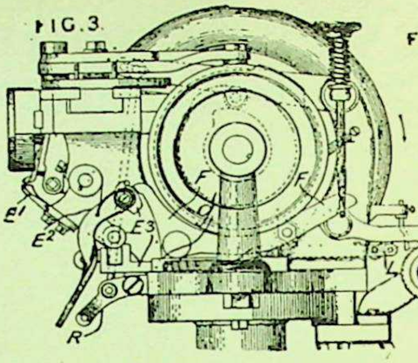


FIG. 18.

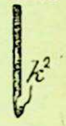


FIG. 5.

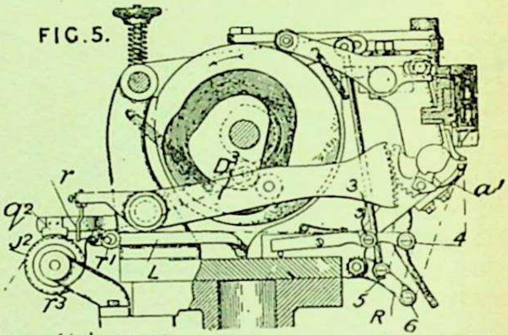


FIG. 19.

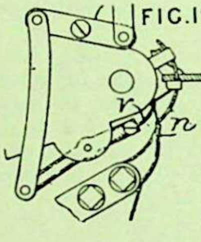


FIG. 24.

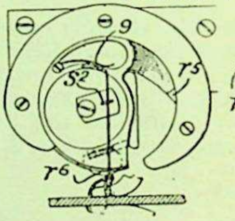
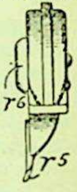


FIG. 27.



Work-supports.—The work-support E¹, Fig. 3, is carried on a lever E², and is normally held up by a spring-pressed bar E³ which engages with the lever E². The bar E³ is normally locked by the pressure of the short end g^1 of a spring-controlled lever F, which is, however, intermittently moved by a cam to unlock the bar E³.

Governing needle thread ; needles, hook, threading-devices for ; perforating-devices ; feed.—The thread passes from the wax-pot, over a tension wheel J², Figs. 3 and 5, to a sheave r^1, in a groove in which it binds itself so as not to slip on the sheave ; and from the sheave r^1 to the take-up sheaves, of which 5 and 6 are on the cam-operated lever R, 3 on the end of a lever normally raised by a spring, and 4 on a fixed pivot. The operation of the machine is as follows :—the awl a^1 pierces the work from below, and the finger v pulls back the thread as in Fig. 19, pulling of the thread from the supply reel being prevented by the pressure of the brake q^2 on the tension-wheel J^2. The awl is then moved laterally to feed the work, the brake is raised, the needle descends, and the awl recedes. Meanwhile the fork r on the awl-operating lever D^3 descends on the thread to draw a fresh supply, backward motion of the sheave r^1 being prevented by a pawl r^3. The looper n threads the needle, the finger v moves so as to free itself from the thread, and the needle and awl ascend. The shuttle hook r^5 now penetrates the loop, which is slightly spread as above described, the lever R at the same time moving so as to give off the necessary thread. On the completion of the forward motion of the shuttle, the lever R is depressed to discharge the loop from the shuttle and needle, and to set the stitch. The sheave r^1 is carried on an extension L of the bar E^3, so that its distance from the tension-wheel J^2, and consequently the amount of thread drawn off by the fork r, are controlled by the movements of the work-support E^1 in adjusting itself to different thicknesses of work.

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373. **Emch, E.,** and **Boss, F.** Jan. 6.

FIG 5.

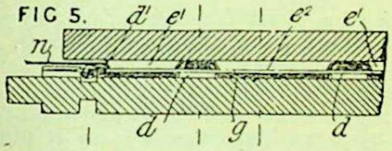
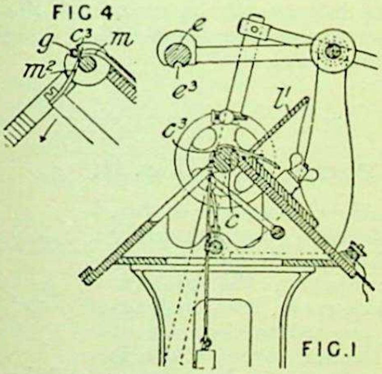


FIG 4

FIG.1



Book-stitching machines. — The pivoted work-support c is formed with flats having between them projections d, d^1, Fig. 5, which engage corresponding recesses in the swinging clamp e. A signature having been placed on the support c, the clamp e is depressed, folding the signature n as shown in Fig. 5. The needle g, guided by slots c^3, e^3 in the projections d, d^1 and e^1, e^2 respectively, then traverses the signature, piercing it alternately from the inside and outside in the manner of handstitching. As the needle withdraws, the loop at its point is entered by the finger m^2, Fig. 4, actuated from the same crank disc as the needle, and this loop, when the signature is folded over on to the support l^1 on the complete withdrawal of the needle g, drops on to the needle m, by which the loops are threaded when the required number of signatures have been stitched.

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645. **Sturt, C. E.** Jan. 11.

Embroidery.—Designs for needlework &c. are produced by means of coloured cubes, which may be subdivided, and have different colours or shades on different sides. The cubes or sections are placed in rows to form the pattern.

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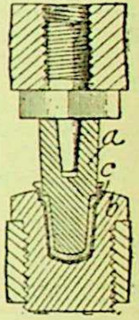
818. **Iles, C. E.** Jan. 13.

FIG.3.



Thimbles.—Relates to the manufacture of celluloid thimbles, and to the provision of a metallic defence for thimbles made of soft substances such as celluloid, xylonite, gutta-percha, &c. In the press for the production of thimbles made wholly or partially of celluloid, a detachable mould c is used in conjunction with the dies a, b. After the operation of the press, the moulded blank can thus be detached by plunging the mould c into water. The die a is connected to the die plate by a tapered pin and socket, so that it too can be detached for the removal of any adhering celluloid. After moulding, the blanks are trimmed and then stored for some days at a temperature of 100° F., to effect their first shrinkage ; a final shrinkage being afterwards produced by heating them to 150° to 170° F. The metallic cap is affixed by electrodeposition and finished by grating or knurling, and, if necessary, further secured by creasing, indenting or otherwise.

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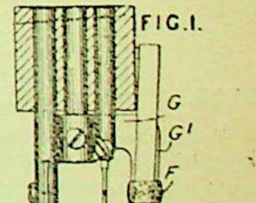
977. **Singer Manufacturing Co.** and **Mort, W.** Jan. 16.

FIG.1.



Sewing - machines, trimming or cutting in. —The blades are straight, and are arranged so that they may be made long enough to allow of being sharpened many times. The stationary blade B, shown in end view, is adjustably secured above the work-plate by a clamp E across it, and is guided at its forward end by a projection engaging in a groove in the throat-plate. The upper blade, having an oblique cutting-edge A^1, is adjustably secured by a clamp F in a slot G^1 in the vertically-reciprocating bracket G. The invention is particularly adapted for scalloping curtains during taping, binding, or hemming.

1135. Tracy, H. R. Jan. 17.

FIG.1.

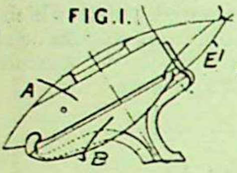
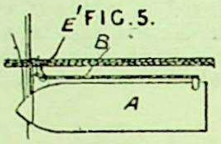


FIG.5.

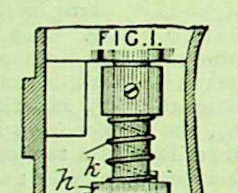


Lock-stitch shuttle sewing-machines; governing needle thread.—Fig. 1 shows a plan, and Fig. 5 a side elevation. The reciprocating shuttle A is provided with an arm B of the shape shown, along which the still extended needle-thread loop slides as the shuttle returns. The spreading of the next loop by the entry of the shuttle, Fig. 5, pulls the loop E^1 off the upwardly-curved end of the arm B, and thus effects the take-up.

1787. Nies, G. Jan. 25.

Sewing-machine feed.—Relates to machines in which the feed-dog is moved vertically by one eccentric or cam and horizontally by another. The latter cam is carried on a loose sleeve *d* driven by a sleeve *h* slidingly keyed on the shaft and having diametrically-opposite projections *g*. The feed can thus be reversed without stopping the machine, by raising the sleeve *h* against the spring *k* by the lever *l*, and allowing it to drop after the shaft has turned through 180°.

FIG.1.

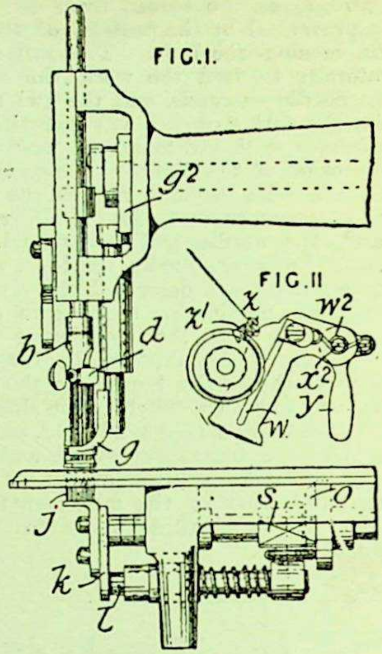


2134. Perkins, T. E. Jan. 31.

Embroidery, machines for. A number of rows of chain-stitch embroidery, such as required for forming ornamental borders on piece goods, are produced at one operation. A number of hook needles are secured in a carrier *b*, which is angularly adjustable on the needle-bar so that the separate lines of stitching may be superposed or separated by a certain distance as required. The needles are secured in slotted holes in the carrier by means of a clamp *d*. The holding-down nipples *g* are secured to an independent bar carrying a cam frame *g*^{2} enclosing its operating-cam on the top shaft. The needle-threaders *j*, corresponding in number and position to the needles, are carried on an arm *k* of a shaft *l*, reciprocated and oscillated by cams *o* and *s* on the bottom shaft, and by springs. The several thread bobbins are carried on a quadrant-shaped support. Tension is applied to each by a finger *w*, Fig. 11, pressed against the bobbin by a spring *w*^{2} coiled on a pin *x*^{2} and adjustable in strength by means of the lever *y*. The thread passes from the bobbin through an eye *z* of a coiled spring *z*^{1}.

FIG.1.

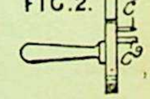
FIG.11



2153. Perry, F. J. Jan. 31.

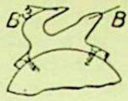
Embroidery, machines for. The pantograph point is securely held without sticking it into, and thereby injuring, the pattern. For this purpose, two locking-bars are pivoted to that one of the pantograph levers which is pivoted to the main fixed frame, and the free end of each passes through a clamp, one of these clamps being on the fixed frame, and the other on the pantograph operating-arm. The usual pantograph point *c*^{8} is prevented from touching the pattern, although allowed to closely follow it, by means of a blunt finger *c*^{9} of slightly greater length.

FIG.2.



2271. Tracy, H. R. Feb. 1.

FIG.2.



Lock-stitch shuttle sewing-machines; chain-stitching machines. — Relates to rotary shuttles and loop-takers, and is especially adapted to those which take up their own slack, as described in Specification No. 22,946, A.D. 1898. The loop taking and retaining hooks are attached to the body of the shuttle &c. by screws or otherwise, so that they may be changed as required, while the manufacture of the shuttles &c. is facilitated. The loop-retaining hook B⁴ and loop-taking hook B³ may be in one piece and secured by one screw, or, as shown in Fig. 2, by two. Or the two hooks may be separate.

2390. Roszell, S. S., and **Allen, J. R.** Feb. 2.

FIG 1.

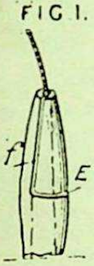


FIG.2.

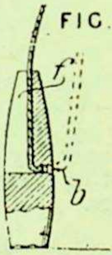
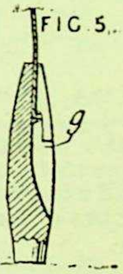


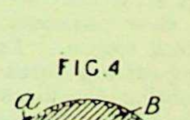
FIG 5.



Sewing-needles.—Consists of means for facilitating threading, and is specially adapted for surgical needles. A transverse hole *b*, extending partially through the head of the needle, opens into transverse and longitudinal slots E and *f* of less width, so that, when the thread is drawn through these slots, the knot is retained in the hole *b*. In a modification, Fig. 5, the longitudinal slot opens into a pocket *g* in the side of the needle.

2488. Gabler, P. Feb. 3.

FIG.4



Thimbles.—The bottom B, formed of glass, steel, or the like, is firmly held at its edge *b* between the flanges *a*, *a*¹ formed on the body of the thimble.

2583. Wise, W. L., [*Adolph Saurer*] Feb. 4.

FIG.4.

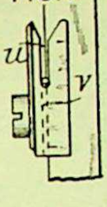
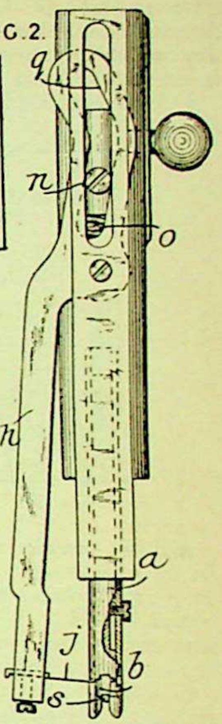


FIG.2.



Needle-threaders for threading the needles of shuttle embroidery machines when in motion. The threader *j*, which consists of a leaf spring and is adapted to pass through a slot in the guide *a*, is carried on a lever *h* operated by a cam slot *q*, and a pin *n* normally pressed upwards by a spring *o*. The guide *a* is forked so as to straddle the needle *s*, and contains a sliding rod *b*. In the position shown, where the pin *n* has been depressed against the spring *o*, the thread is clamped between the threader *j* and rod *b*. On now pressing the apparatus against the needle, the rod *b* is driven back and the threader slips into the needle groove, and ultimately, under the action of the spring *o*, enters, and instantly retires from, the moving needle eye, leaving the needle threaded.

Embroidery, machines for. In the use of the above threader, the thread is preferably led to the needle through the needle attachment plate, which may be formed with a slot *u* for this purpose, in its turned-down part *v*, Fig. 4.

2805. Macdonald, J. K., [*Singer Manufacturing Co.*]. Feb. 8.

FIG.4.

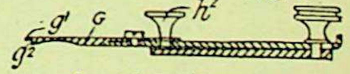


FIG.3.

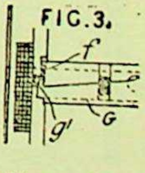
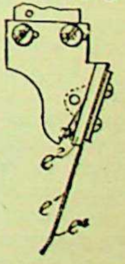


FIG.6



Sewing-machines, trimming or cutting in; guiding materials. — Consists of means for trimming off the edge of the lower of two pieces of material so as to leave the upper piece projecting somewhat, and is particularly intended for use in shoe-sewing machinery, as in trimming the edges of the shoe-top linings. The trimmer-bar, which by means of a spring-pressed pin may be thrown into or out of connection as required with an oscillating arm, has pivoted to its lower end a block e^2, Fig. 6, carrying the knife e in an inclined position but parallel with the seam. Beyond the knife-edge projects a pin e^1 which engages in a hole f, Fig. 3, in the throat-plate, so that, as the trimmer-bar is reciprocated, the knife moves in a path curving towards the needle. The guide-plate G has a lip g^1 under which the upper piece of material is guided by the edge g^2, and is adjustable towards or from the throat-plate by means of the screw h^3.

2903. Macdonald, J. K., [*Singer Manufacturing Co.*]. Feb. 9.

FIG. 2.

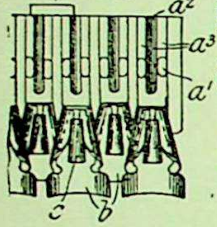


FIG. 3

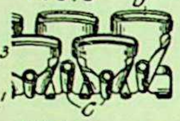
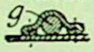


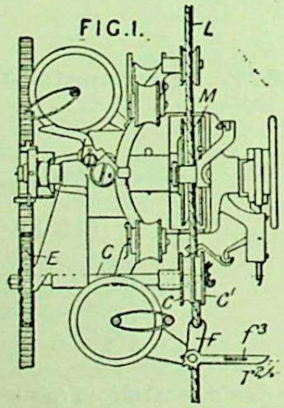
FIG. 9.



Multiple-needle machines, applying cords in; folding-attachments; presser-feet. — The cords g, Fig. 9, are each centrally enfolded within a strip of material, which is stitched down by its edges. The guides &c. are preferably carried by the presser-foot, of which Fig. 2 shows an underside view and Fig. 3 a front view. The rearwardly-tapering strip-guides b each carry centrally a cord guide c, and in line with these on the bottom of the presser-foot are strip grooves a^3 and deeper cord grooves a^2, the grooves a^3 being pierced with needle-holes a^1. The strip-guides are staggered as shown, in order to get the cords close enough together on the work.

2904. Macdonald, J. K., [*Singer Manufacturing Co.*]. Feb. 9.

FIG. 1.



Carpet-sewing machines.—Consists of improved means for returning to its starting position the carpet-sewing machine described in Specification No. 16,460, A.D. 1894. On the end of a seam being reached, the clutch-wheel M, driven by the endless rope L, is thrown out of connection with the driving-shaft, as in the Specification above referred to. The belt L is then, by means of the lever F, shifted from the loose pulley c on to a pulley c^1 fast on the shaft C, which carries a pinion geared to the rack pinion E. When the machine reaches its starting position, a fixed projection r^3 engages the arm f^3 of the lever F, thus throwing the rope H back on to the loose pulley.

3059. Petri, O. Feb. 11.

FIG. 1.

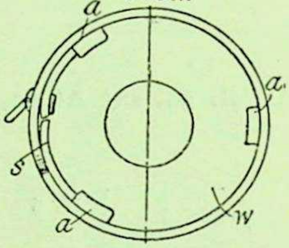
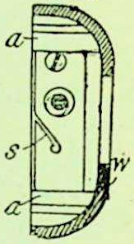


FIG. 3.



Lock-stitch shuttle sewing-machines; lock-stitch hook sewing-machines.—The spool cap w is made from a thin steel plate by stamping or otherwise, and is provided with inner lugs a for guiding the spool, and a tension spring s secured inside the cap between two of the lugs.

3083. Preusse, C. E. Feb. 11.

FIG. 1.

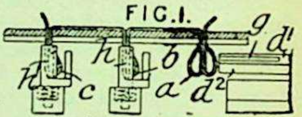
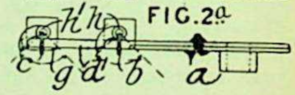


FIG. 2a.

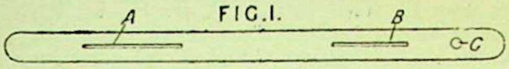


Book-stitching machines; knotted-stitch machines. — Three loops of thread are formed in the usual manner, the pivot a being longer than the others and doubled back as shown; the other two b, c are drawn into pivoted tubes h, h^1. The tongs d^1, d^2, of which only one end is shown, are then advanced, passing first through the doubled loop a. As they reach the other loops, a projection g turns the tubes h, h^1, Fig. 2^a, so presenting the loops b, c for the tongs to enter them. The tongs open to seize the loop c, and draw back the loose end of thread through loops b and a, a knot being formed at a on tightening up.

3310. Hudson, J. Feb. 14.

Bodkins.—A tape or like threader is made from a flat strip of wood, vulcanite, metal, or other material, by forming slots or holes therein such as A, B, C, and rounding the ends and edges.

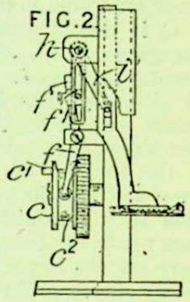
FIG.1.



3640. Benson's Patent Hemstitching Machine Co., Batchelor, J. A., and Hall, F. E. *May 17.*

Sewing-machine feed; presser lifted automatically.—Relates to machines of the kind described in Specification No. 5903, A.D. 1893, in which the work is fed by the presser-foot. The wheel c, geared to the main shaft, has a cam-groove c^2 operating a lever f carrying an adjustable block f^1, which engages in a slot in an arm on the rear end of a rock-shaft h. An arm i on the front end of this shaft engages with the presser-bar, and effects the horizontal motion of the presser-foot. The presser-bar is moved vertically from the pin c^1 in a usual manner.

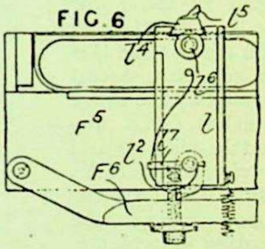
FIG.2.



3661. Harrison, H., and Ritter, A. Feb. 18.

Leather-sewing machines.—Relates to a wax or dry thread machine having a straight needle and needle-bar and a straight shuttle and shuttle race.

FIG.6

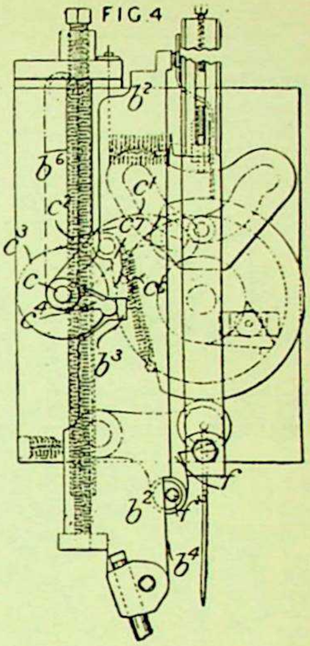


Presser lifted automatically.—Fig. 4 shows a front view of the head with the cover removed. The slide b^2, carrying the upper stitch-marker and presser-foot, has a slot b^3 in which engages a finger c^4 secured to a shaft c carrying a ratchet-wheel c^3. This wheel is turned to lift the slide by a pawl c^2 on a cam lever c^1, and the slide is depressed by a spring b^6 on the release of the pawl by the engagement of a projection c^6 with its tail c^7. The vertical adjustment of the slide b^2 to different thicknesses of work is thus automatically obtained. According to the Provisional Specification, the slide b^2 may alternatively be formed with a rack engaging a toothed segment on the shaft c.

Feed.—The feed motion of the slide b^2 is obtained from a cam lever f carrying an eccentric stud f^3, which is adjustable to vary the feed and which engages with the slide-face b^4 made inclined so that changes in the thickness of work shall not affect the rate of feed.

Governing needle thread; waxing thread.—The thread is pulled off by a lever actuated by the needle-bar and capable of longitudinal adjustment in the pivoted boss which supports it, to vary the amount of thread drawn off. This adjustment is automatically effected, in accordance with the varying thickness of the work, by connecting the lever by a slotted bell-crank lever with the slide b^2. The thread, after leaving the wax-pot, passes between horse-hair pads, and then round a revolving dome engaged by an adjustable friction block.

FIG.4

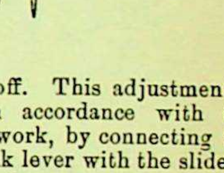


Marking-attachments.—Fig. 6 shows the underside stitch-marking device. The marker l^5 is fixed on a slide l^4 adjustable by a screw l^6 and carried in a vertically-moving slide l. This slide is actuated by a lever F^6 pivoted to the shuttle-carrier F^5 and engaging a catch l^2 pivoted to the slide, so that the slide is lifted when the carrier F^5 moves to the left, and dropped when it returns. The catch l^2 is provided with an arm l^7, which can be turned from outside the machine, so as to throw the marker out of action.

3778. Müller, F. W. Feb. 20.

Chain-stitching machines; feed.—Consists of a machine of simplified construction, which is adapted for use as a toy. The looper-carrier l pivoted at g, and the feed-dog carrier p sliding on a pin u, are both actuated by a pin o on the end of a lever connected

FIG.5.



with the needle-bar lever, this pin engaging in cam openings in the looper and feed-dog carriers. The feed-dog is raised during its forward motion by the engagement with it of the looper-carrier, which is then moving in the opposite direction.

3787. Lorrain, J. G., [*Binney, H.*]. Feb. 20.

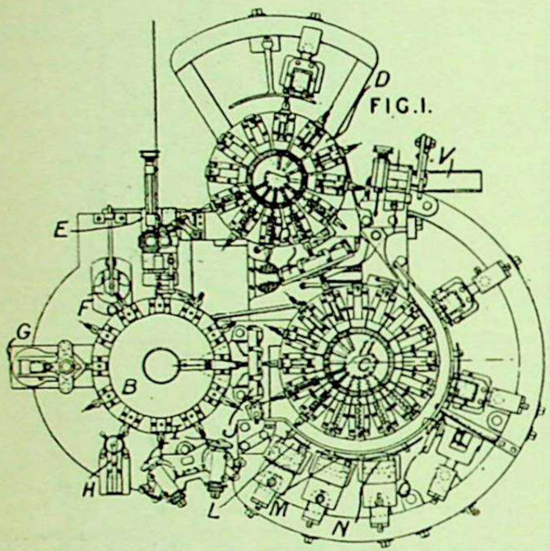


FIG.1.

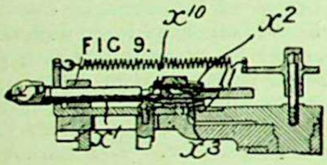


FIG 9.

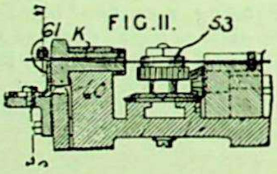


FIG.11.

Sewing-needles. — An improved needle-making machine is shown in plan in Fig. 1. Each needle-blank is held successively in three intermittently - rotated carriers B, C, D, which are fitted with radial chucks to receive them. The blanks are stamped while in the carrier B, and ground and polished in the carriers C, D. The wire feed and cutter E is shown enlarged in Fig. 11. The moving cutter consists of an oscillating sleeve K having a longitudinal opening through it which at the end adjacent to the fixed cutter 61 is eccentric to the axis of the sleeve. Thus, in the movement of the sleeve K, the wire is carried below the blade 61, which cuts it and at the same time momentarily stops the feed of the wire by the friction rolls 53. F is a press which slightly flattens the end of the blank so as to facilitate the accurate stamping of the eye by the die G. The eye is cleared by a punch H, and the blanks are next held in jaws which leave their burrs exposed to be ground off by the grinders I. The devices F, G, H, I all operate during an interval of rest of the carriers. The chucks on the carriers C and D are rotary; Fig. 9 shows one of them enlarged. The shaft x^1 carrying the chuck jaws is normally pressed inwards by a spring, so that a shoulder x^{10} on it is in frictional contact with a sleeve x^2 rotated by the bevel-wheel 11. The shaft x^1 and sleeve x^2 are further connected by a spring feather x^3 and slot. Each chuck on coming opposite the transferring-devices J, Q is thrust outwards, the shaft x^1 being thus disengaged from the sleeve x^2 and its rotation therefore stopped. The grinders L, M, N, O are set at a slight angle to the path of travel of the needle blanks, so that, as the blanks are carried over them, they operate on a considerable extent of the surface of the blanks. The blanks are removed from the carrier D by rolls which present them to a straightening-roller, which discharges them ready for tempering into the chute V. The above are the important features of the machine; the Specification describes at length the different parts of which it is composed.

3821. Singer Manufacturing Co. and **Pollock, R. A. F.** Feb. 21.

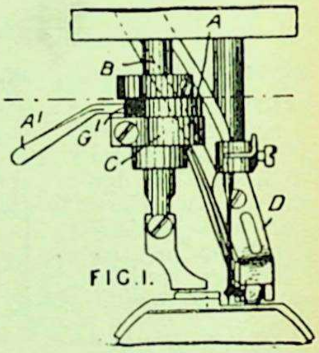


FIG.1.

Sewing-machines, attaching buttons in.—Relates to machines for sewing on shank buttons such as those for boots. Pivoted on the presser-bar B is an eccentric A embraced by the lower bracket C of the button-slide D and having a handle A^1. By turning the eccentric, the motion of which is limited by stops G^1 on a disc adjustable on the presser-bar, the slide D can be placed in the position shown, or be moved so that the button is clear of the needle, for sewing a few barring-stitches.

3992. Robertson, W., and **Knight, J.** Feb. 23.

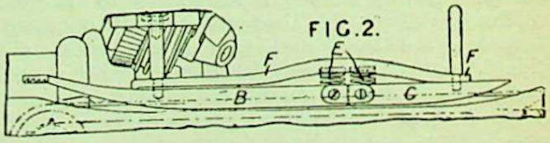
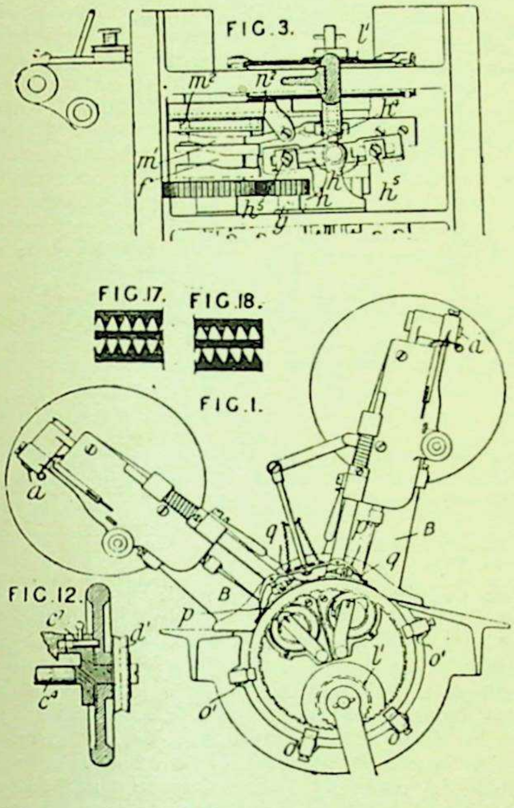


FIG.2.

Sewing-machine presser-feet.—Relates to overedge-stitching machines of the kind described in Specification No. 14,762, A.D. 1892, in which a helical needle is used for sack seaming and the like, and is designed to facilitate the sewing of doubled or thickened parts of the material. For this purpose, the pressing-bar is made in two parts B, C, hinged together at their inner ends, and with a spring E between each part and the upper part F of the bar.

4152. MacGlashan, D. July 27, A.D. 1898, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].



Hem-stitching machines; multiple-needle machines.—Consists of a hem-stitching and veining machine in which one or more needles simultaneously produce one or more parallel rows of open work or veining-stitches. Fig. 1 shows an end view, and Fig. 3 a partial bottom plan, of a two-needle machine. The needles and their corresponding shuttles are carried by arms B arranged radially round the feed-ring. The needle shafts, the shuttle shafts, and a cam shaft g are rotated in unison by means of a triangular connecting-rod pivoted to cranks on the needle and the cam shafts, and connected to similar cranks on the shuttle shafts by separate links.

Needle-bars, vibrating laterally.—The needle-bar guide is supported by one end of a double-elbowed lever pivoted at a near the front of the machine and carrying at its other end the shuttle and needle plate. Thus, as this elbow lever is oscillated to effect the lateral motion of the needle-bar, the needle and shuttle &c. are always in their correct relative positions. The elbow levers are oscillated in opposite directions by means of a cam lever h, Fig. 3, carrying bolts, the T-heads of which engage in grooves in the lower ends of the elbow levers. By the longitudinal adjustment of the screws h^5 in the slots h^3 the lateral movements of the needle-bars can be independently varied, and by their transverse adjustment in the slotted plates h^4 the distance between the rows of stitching can be changed. The needle-bar guides can be moved a small distance in the feed direction, to allow of the production of the two forms of stitch shown in Figs. 17 and 18.

Feed.—The feed-ring is supported on rollers o, o^1, and is moved by an internal pinion l^1, which may be replaced by others of different sizes. This pinion is moved by a pin carried by a slide operated by the cam m^2, the pin being moved into or out of contact with the pinion l^1 at the proper times by a lever n^2 operated by a cam m^1.

Presser lifted automatically; presser-feet.—The work is constantly held by pressers q, and intermittently by pressers p operated by an eccentric on the shaft g.

Stopping-gear.—The power is received by one of the pulleys d^1, and each pulley is connected to its shaft c^4 by a pin c^7, Fig. 12, which engages either with a hole in the flywheel or with a hole in the frame.

Governing needle thread.—The cam which operates the bell-crank lever forming the take up has its wall inwardly curved to allow of the motion of the lever. The cam f is of similar construction.

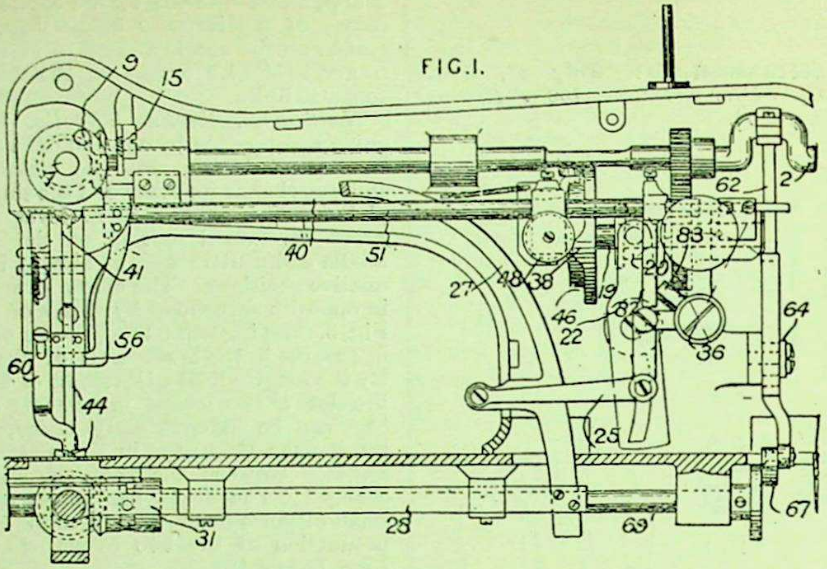
4153. Thomas Manufacturing Co. and **Connery, T.** Feb. 24.

Buttonhole-sewing machines; hem-stitching machines; ornamental-sewing machines; embroidery; needle-bars, vibrating laterally.—The machine is primarily intended for buttonholing, but may, with slight modifications, be used for hem-stitching and other kinds of ornamental sewing. The pivoted head in which the needle-bar is reciprocated, and the frame 31 carrying the revolving hook &c., are moved simultaneously by a frame 27, 28 actuated by a link 25, slotted lever 22, and cam 20 on the countershaft 19. The position of the link 25 in the lever 22, and thus the size of stitch, is determined by a weighted lever 36.

Feed; presser-feet.—The work is fed by a feed-foot 44 operated by cams 38, 46 on the shaft 19. The cam 38 actuates a sliding rod 40 having an inclined face 41 by which the feed-foot is lifted; and the cam 46 actuates a sliding-rod 51 carrying a wedge 56 which gives the foot 44 its horizontal motion. The cam 46 is in the form of a truncated cone having a flattened part, and the cam roller 48 is adjustable to or from the centre of this cone to vary the feed. The feed is stopped during barring by a projection 83 on the lever 36 engaging a projection 82 on the rod 51, which is thus thrown out of engagement with the cam 46. A spring presser-foot 60 is provided. The Provisional

Specification states that either the feed-foot or the centre of the work-plate may be capable of rotation to allow of turning the work.

Needle-driving ; governing needle thread.—On a short transverse shaft 7 is a crank pin 9 from which the needle-bar is reciprocated, and a cam by which the take-up lever, shown in section at 15, is operated.



Lock-stitch hook mechanism.—The under shaft 69 is driven from the shaft 2, so as to have a dwell at one point of its revolution and an acceleration at another point, by a rod 62 slotted to engage with a fixed roller-stud 64 and connected to the crank-pin 67 by a short link.

4591. Lea, E. C. March 2.

FIG.3.

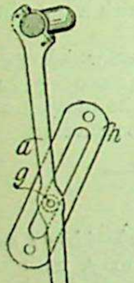


FIG.15.

FIG.15a

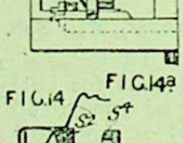


FIG.8

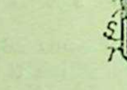


FIG.1.

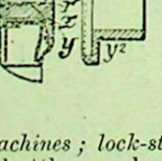
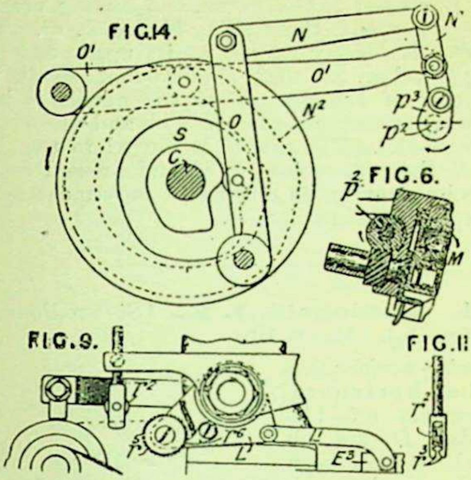


FIG.14 FIG.14a

Chain-stitching in lock-stitch machines ; lock-stitch shuttle sewing-machines.—The shuttle or looper shaft c^1, Fig. 3, is rotated at varying speed from a crank on the main shaft, by a connecting-rod a, a pin e on the lower end of which engages a slotted arm on the shaft c^1, while a pin g near the middle of its length moves in a straight guide h inclined to the vertical. The shaft c^1 is placed away from the centre of the elliptical path of the pin e. The shuttle body r, Fig. 14, has a hollow centre in which fits the pin s of the cover s^3, guided in place by the projection x and slot r^3. The thread leaves the shuttle by an annular space between the parts s^3 and r. For chain-stitching, the looper, Fig. 15, is substituted for the shuttle. The parts s^3 and r are here made without opening between them, and a hook v, broad at the base v^1, is provided in addition to the hook r^2. In both shuttle and looper, the cover has a raised part y, Fig. 15^a, between depressions w, w^1. A pin s^2 on the cover fits in a slot s^4 in the rim y^2 of the carrier, Fig. 14^a. The shuttle or looper is held in the carrier by a hinged shutter k^1, Fig. 1, carrying a spring which presses against the spring s. A spring flap l locks the shutter in position, and, when depressed, turns the shutter to release the shuttle.

Governing under thread.—The tension block m^1, Fig. 8, is carried on a spring m secured to the shuttle cover. Or the block m^1 may be pivoted to the cover and acted on by a spring similar to m.

4645. Lake, H. H., [*Bertrand, J. E.*]. March 2.

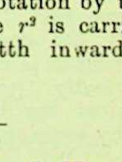


Boot-sole stitching-machines ; wax-thread machines.—Consists of improvements in the shuttle mechanism and in the thread-controlling devices of the machine described in Specification No. 263, A.D. 1899.

Lock-stitch shuttles and shuttle mechanism.—The axis of the shuttle M is inclined to the horizontal, Fig. 6, and it is driven through screw gearing from a shaft p^2 rotated always in the same direction by the cam-grooves *s*, N^2, connected by levers O, N, and O^1 to the link N^1 and crank arm p^3 on the shaft p^2, Fig. 14, the arrangement being such that the shuttle is stationary during about half the revolution of the shaft C, while the needle penetrates and leaves the work, and has also a shorter standstill while the stitch is set.

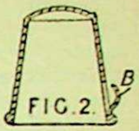
Governing needle thread.—The bar E^3, Fig. 9, connected with the work-support as described in the above-mentioned Specification, is connected by a link L^1 to the lever L, carrying the thread sheave r^5, locked against backward rotation by the pawl r^6. The thread puller sheave r^2 is carried in a housing, Fig. 11, provided wtth inwardly-projecting guard lugs r^3.

4658. Horner, J. D., Horner, C. H., and Leach, C. W. March 3.



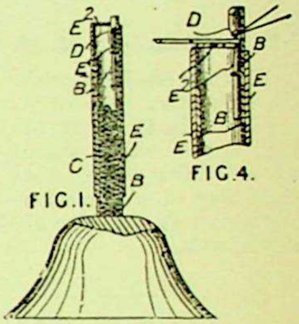
Thimbles.—Relates chiefly to composite thimbles of the kind described in Specification No. 8954, A.D. 1884. The outer casing is formed thickest at its apex 2, where there is most wear, and tapers away towards the mouth. It may be formed with a guard ring 4, turned over as shown, or, according to the Provisional Specification, formed by milling the edges of the outer and inner casings over a ring introduced between them.

4866. Pattee, H. H. March 6.



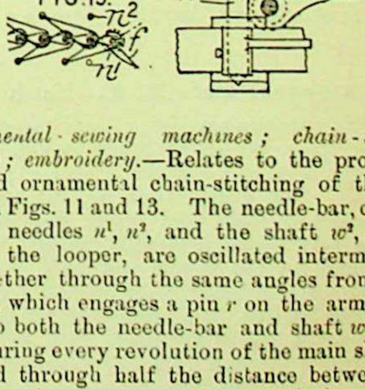
Thimbles combined with thread-cutters. A partially-severed portion B of the thimble is bent outwards, and the edges of the connecting-neck are sharpened for thread cutting. The cutter B may, however, be secured to the thimble by riveting &c.

4947. Lees, T. March 7.



Needle - threaders.—A needle-threader in which the threading-hook D is carried by the stationary rod or tube B, and the needle rest E^2 is formed by the outer sliding casing or tube E shown in Fig. 1. The spiral spring C within or around the tube B actuates the outer tube E. The base-plate A may be flat. The threading of the needle is brought about by placing the needle on the rest, depressing the outer tube E and the needle over the hook D as shown in Fig. 4, looping the thread, and releasing the outer tube.

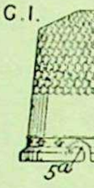
4988. Koehler, B. March 7.



Ornamental - sewing machines ; chain - stitching machines ; embroidery.—Relates to the production of raised ornamental chain-stitching of the kind shown in Figs. 11 and 13. The needle-bar, carrying the two needles n^1, n^2, and the shaft w^2, Fig. 3, carrying the looper, are oscillated intermittently and together through the same angles from a cam *e*, Fig. 1, which engages a pin *r* on the arm h^2 connected to both the needle-bar and shaft w^2. The cam *e*, during every revolution of the main shaft W, is turned through half the distance between two projections by a worm *s*. On the shaft w^2 slides without rotation a sleeve m^2, which carries in a similar manner a sleeve m^3. These sleeves receive their appropriate vertical movements from levers q^1, q^2 actuated by a cam n. The looper f is pivoted on a pin f^1 carried in a frame mounted at the top of the shaft w^2, and is oscillated vertically by the pin i^1 on the sleeve m^2, and axially by the engagement of the ends of the pin f^1 with oblique slots in side projections of the sleeve m^3. Fig. 11 shows the looper about to take the loops from the needles, and Fig. 13 the position of the needles at their next descent, the needle n^1 being guided into the loops by engagement with the longitudinal channel f^2 in the looper.

5173. Randell, E. H. March 9.

FIG. 1.



Thimbles combined with thread cutters. A slot 5^a is formed in the body of the thimble with a sharp thread-cutting edge, the slot being open to receive the thread at the edge of the thimble.

5283. Macdonald, J. K., [*Singer Manufacturing Co.*]. March 10.

FIG. 1.

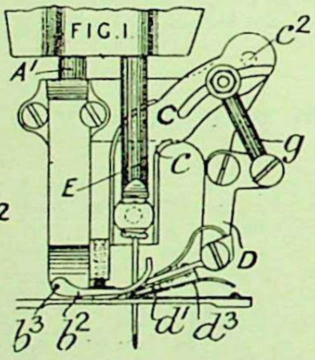
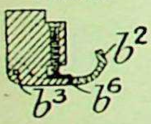


FIG. 8.

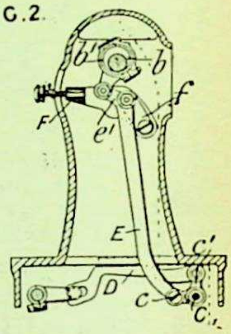


Sewing-machine folding-attachments. — Attached to the presser-bar A^1 is a frame to which is pivoted at c^2 a lever C having a groove c adapted to engage with a roller on the needle-bar E. Between the groove c and the pivot c^2, the lever C is adjustably connected by a link g to a crank lever D pivoted to the frame, and having pivoted at its lower end the ruffling-blades d^1, d^3. The groove c is sharply curved at its upper end and straight below, so that the fold made at the beginning of the descent of the needle is held stationary while the needle pierces it and withdraws.

Presser-feet.—The part b^2 is hinged to the rigid part of the presser-foot at b^3, and pressed downwards by a spring, its downward movement being limited by a bridge-piece b^6.

5284. Macdonald, J. K., [*Singer Manufacturing Co.*]. March 10.

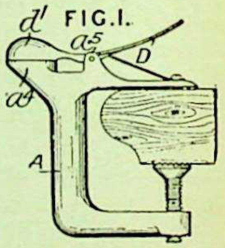
FIG. 2.



Sewing-machine feed.—The horizontal movements of the feed-bar D are obtained from an eccentric b on the main shaft, instead of from a cam the wear in the yoke of which is objectionable. The eccentric-strap b^1 is connected to the arm e^1 of the link E, which is connected by a link f to the regulating-lever F, and at its lower end to the arm c of a shaft C, to another arm c^1 of which is pivoted the feed-bar D.

5292. Mitchell, H. March 10.

FIG. 1.



Sewing, work-holders for.—The table cramp A is provided with a clip consisting of a lever D, pivoted between ears a^5 integral with the cramp, and having a jaw face d^1 normally pressed against the jaw face a^4 by a spring.

6099. Doutreligne, E. F. March 21.

Boot-sole stitching-machines ; work-supports ; feed.—A machine for sewing the soles of sandals, and especially those known in Spain as Espadrilles. The sandals are held in lasts t, which are carried round on a feed-roll r under a roll r^1 and under spring-pressed rollers. The rolls r, r^1 are turned one tooth after every stitch by ratchet gearing driven from a pin on the shaft f through an arrangement of links and levers described in detail. Fig. 15 shows one of the lasts in plan. The sandal is held between pivoted parts 1, 2, which are locked together. Holes are provided for the stitches and for the needle and awls.

Needles ; needle-driving ; perforating-devices.—The needle q^1 and an awl the length of a stitch away from it are carried in a slide l actuated through a pin y from a cam z on the shaft f. The holes for the needle are partly made by a second awl q^3 carried in a slide l^1 actuated from an eccentric x^1 on the shaft f through links &c. described in detail. The needle, which is eye-pointed, has longitudinal grooves to receive the thread.

Lock-stitch shuttles and shuttle mechanism.—The shuttle is carried in a case V, and holds a relatively large spool. It is oscillated by pins d^1, d^2 driven through a rack and pinion p^2 and cranked shaft e.

Governing needle thread.—The draw-off lever l^2 is pivoted at o^1 to a support fixed to the slide l. One end carries a pin s^3 sliding in a fixed groove; on the other side of its fulcrum a bent lever n^5 is pivoted at o^2. One end of the lever n^5 carries a thread sheave x^6, and the other is connected to a spring-controlled rod t^1. The thread passes through a spring catch v^6, a lock at o^1, the sheaves x^8, x^6, x^7, and a hole p^6 in the end of the lever l^2. The thread lock is shown in Fig. 13. The thread passes through holes n^7 in the pivot o^1 and a tube n^3 sliding on it. The tube is pressed by a spring against a cam bar j^1, so that, as the slide l moves to and fro, the thread is alternately locked and released.

FIG. 1.

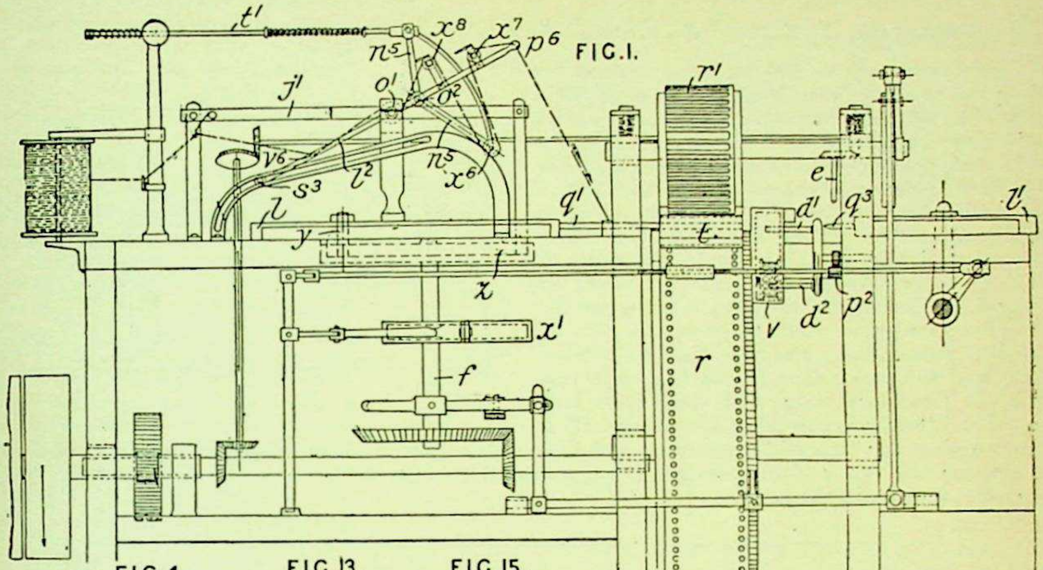


FIG. 4.

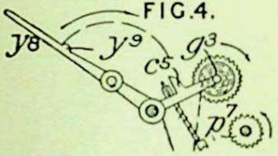


FIG. 13.

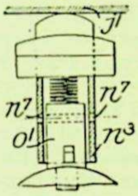
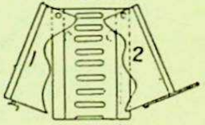


FIG. 15.

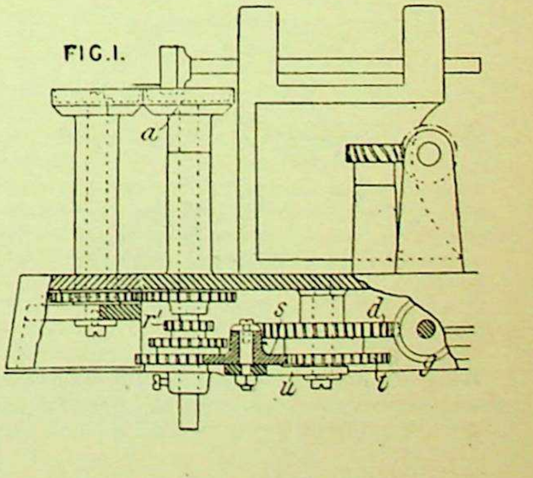


Spools and the like, winding.—The shuttles are wound on a device shown in Fig. 4. The spool shaft g^3 is carried in a bracket c^5, which can be moved so as to throw the shaft into gear with a rotating pinion p^7, and is then locked by a spring y^9. A finger y^8 of the spring rests on the thread of the spool so that, when the spool is full, the spring is released and the spool shaft thrown out of gear.

6119. Köhler, J. March 21.

Knitted-fabric sewing-machines; feed.—Consists of improved means for varying the length of stitch in machines of the kind described in Specification No. 16,776, A.D. 1898, in which the feed-roll a is driven from a worm-wheel d intermittently rotated from a worm g, which, as it rotates, is also moved to and fro by a cam on it engaging with a fixed pin. In order to vary the speed of the roll a, the latter carries on its shaft a number of toothed wheels r^1 &c., which are vertically adjustable in order that any one of them may be put in gear with the wheel s carried on a swing frame u and always in gear with the wheel t connected with the worm-wheel. In a modification, the wheel s is vertically adjustable instead,

FIG. 1.



its depth being increased to the necessary extent. In another modification, there is only one change-wheel r^1 on the shaft, and it is replaced by one of a different size as required.

6680. Cameron, J. F., and **Cameron, J. A.** March 28.

Folding-instruments. — Relates to machines for folding and pressing down hems on the edges of a length of handkerchief or other fabric preparatory to stitching the same. Fig. 1 shows a machine for use in making hem-stitched handkerchiefs. The two sets of folders g, g^1 are adjustable towards or from each other on boards G, which are also similarly adjustable and are hinged to the frame so as to rest lightly on the lower heated roller c^2. The short upper rollers B^2 are normally raised by springs S, the bearings of their shafts being pivoted at a. They are pulled down to press the hem by links D, levers E, &c. Between the two sets of folders and the two rollers B^2 is a free space into which the loose central part of the fabric may fold. The fabric, after passing the rollers B^2, is led over a plate I in view of the operator, and then passes over a table where it is cut at one edge in suitable lengths, by a foot-operated shears consisting of a movable blade co-operating with the sharp edge of a slot in the table.

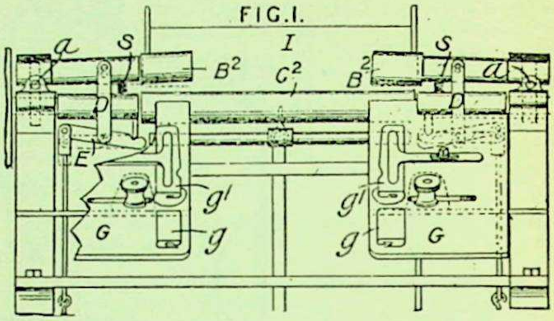


FIG. I.

7072. Nolan, A. April 4.

Sewing-machine spool-holders; thread-guiding eyes. — Consists of means for preventing the thread from kinking as it is drawn from the spool. A disc A, fitting easily on the spool-holder C, has a lug d in which is hinged an arm E, provided at its free end with an eye f through which the thread passes from the spool.

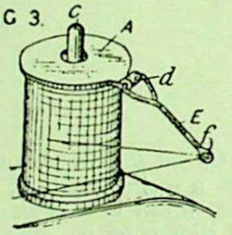


FIG 3.

7311. Dorman, W. H. April 7.

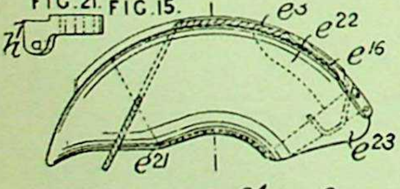


FIG. 21. FIG. 15.

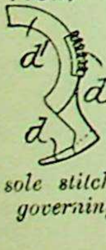


FIG. 10.

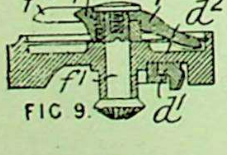


FIG 9.

Boot-sole stitching-machines; governing needle thread; governing under thread. — The shuttle, Fig. 15, has a flat back and a curved front, and is held in its circular race by a rib e^3 engaging a groove in the race. It has a shoulder e^{21} which assists in tightening the stitch, hollow e^{22} into which the needle dips to cast off the loop, and thread tension spring e^{16}. The driver, Fig. 9, consists of the driver proper f fixed to the shaft f^1, and the cover f^3 locked to the part f by a spring catch f^4. The loop is spread by a wedge d, Fig. 10, resting against the rim of the race and carried on a segment d^1 sliding in a race d^2, and oscillated by means of an adjustable cam lever and teeth d^4. The tail of the shuttle has a cover e^{23} to prevent entanglement of the threads, and for the same purpose the cover f^3 is extended over the nose of the shuttle. The shaft f^1 is rotated at variable speed in a similar manner to that described in Specification No. 7727, A.D. 1896.

Needles, hook, threading-devices for.—The looper, which lays the thread in the hook, is carried on a lever which is slid to and fro by one cam, on a horizontal rod on which it is oscillated vertically by another cam.

Needle shields:—The needle shield, Fig. 21, has a shoulder h^1 to prevent the shuttle thread from getting on the wrong side of the needle and getting caught by the shuttle-driver.

Guiding materials; work-supports.—The channel gauge is made with a forked end to embrace the channel lip. The work-support has a slot for the passage of the needle and awl. It is carried on a lever having a toothed segment engaging with a pinion, and is withdrawn from the work during the feed by a pawl carried on a cam lever and engaging ratchet teeth connected to the pinion. The work-support may be held against the work by means of a similar pawl and oppositely-directed ratchet teeth.

7516. Nederman, H. April 10.

Sewing-machine folding-attachments; feed.—Consists of an improved machine for folding and sewing together the edges of two pieces of material. Fig. 4 shows a front view of the essential parts of the machine, which are carried on the end of the horizontal arm. Fig. 10 shows in plan the arrangement of the folding and feed jaws. In operation, the parts being in the positions shown, with the exception of the feed-jaws 32, which are held open by a treadle-operated cam, the two pieces of material are placed between the jaws 12 and the jaws 17. On the feed-jaws being allowed to close and the machine started, the jaws 12 move outwards and the jaws 17 inwards, gripping the material. The folding-jaws 22 now move inwards, bending over the edges of the material, which are then turned down over the jaws 12, Fig. 10, by the descent of the turner 26. The turner is then raised, the jaws 12 close, the horizontal needle 6 penetrates the material, and a stitch is made. The jaws 12 are provided with guides 70, Fig. 4, to keep the material parallel. The slide to which the feed-jaws are attached is operated by a cam and a spring, and is provided with an adjustable stop by means of which the length of stitch can be varied. Fig. 7 is a side view showing the spreader 62 by which the edges are held in position to be engaged by the turner when turning a corner. When in use, the spreader is held in position by a dog 68 against the action of the spring 66, which withdraws the spreader when the dog is released by the cam-projection 69.

FIG.4.

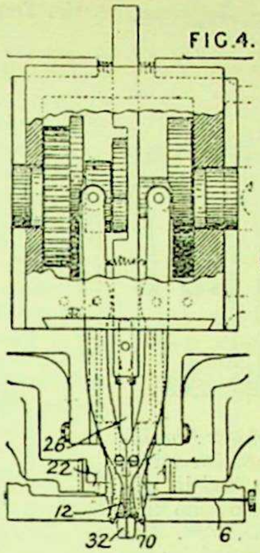
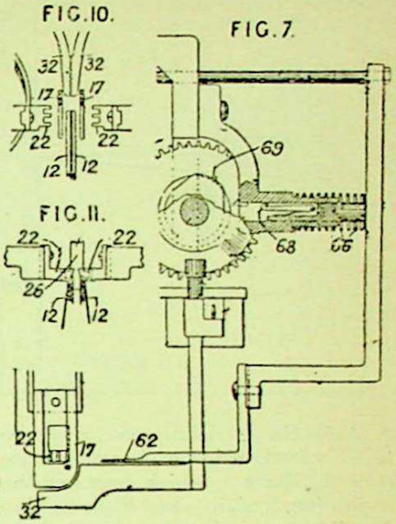


FIG.10. FIG.11. FIG.7.



7662. Noble, D. April 12.

FIG.4

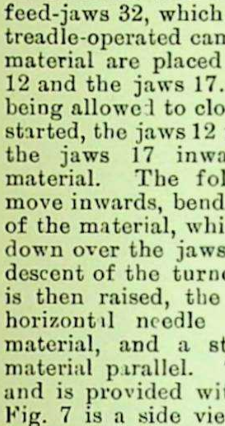
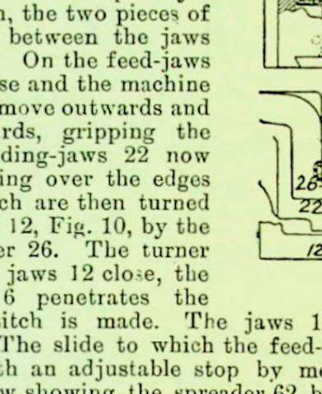


FIG.6. FIG 3.



Sewing-machine stopping-gear; ornamental-sewing machines.—Relates to sewing and other machines which require to be put into rotation intermittently, either automatically or by hand, and is partly an improvement on the friction driving-gear described in Specification No. 4770, A.D. 1897. The loose pulley 20 carries a leather washer 24, on one side of which is a disc 25 secured to the fixed clutch disc 22 by bolts 26 and by springs which urge the disc 25 towards the disc 22 so as to grip the washer 24. A brake disc 31, loose on the sleeve 32, is provided with inclines 33, Fig. 6, engaging corresponding inclines on a fixed disc 35, so that, when the disc 31 is rotated in one direction, it also moves axially, first disengaging the clutch by contact with the heads of the bolts 27, and then stopping the machine by contact with the brake ring 29. The disc 35 is adjustable to take up wear by means of a slot and screw 38. To a projection of the disc 31 is pivoted an elbow lever having on one arm a roller 45, Fig. 3, to engage with a cam 42 on the disc 22, and with the other arm 44 engaging in a cam slot 47 in a treadle-lever 48 pivoted at 49. When the cam end of the lever 48 is depressed against the spring 60, the arm 44 is moved to the left, the clutch is in action, and the roller 45 is out of the path of the cam 42. On releasing the lever 48, the roller 45 comes into the path of the cam 42, which thus moves the disc 31 to stop the machine with a force proportional to the momentum of the moving parts. The cam slot 47 is modified when the machine has to be stopped after each stitch. These movements may be effected automatically by means of a disc 52, Fig. 4, having one or more notches in which a dog 50 on the elbow lever can engage, and rotated by a silent feed which is adjustable to vary the number of stitches between the stops. In a modification, a ring and ball race are interposed between the bolts 26 and the disc 31.

7843. **Nadel, D.,** and **Herzberg, H.** April 14.

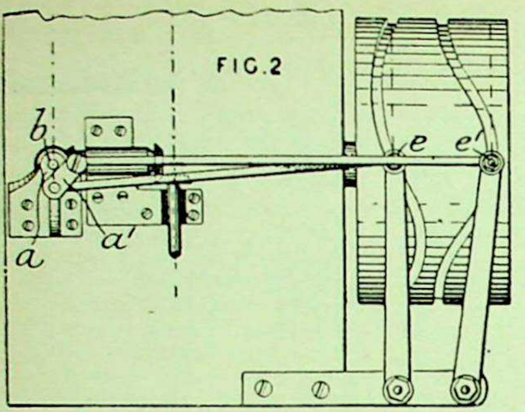


FIG. 2

Embroidery; ornamental-sewing machines; braiding; feed.—Consists of improved means for actuating the shaft *b*, which operates the feed in embroidering, braiding, and like machines of the kind described in Specification No. 5702, A.D. 1898. The shaft *b*, in addition to the crank *a* operated by the cam-groove *e*, is provided with a second crank a^1, set at an angle to the first, and operated by a second cam-groove e^1 designed to co-operate with the cam-groove *e*. By this arrangement dead points are avoided.

8151. **Gammons, W. P.** April 18.

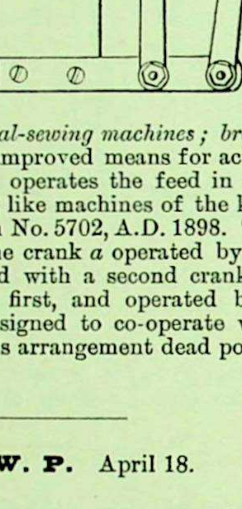


FIG. 3^a FIG. 2^a

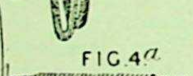


FIG. 4^a

Hat-sewing machines; guiding materials.—Consists of an improved method of securing a sweat band, reed, and reed cloth into a soft hat, and of an improved sewing-machine for doing this. The guide, shown in underside plan in Fig. 10, consists of a fixed part 12 and a lever 20 pivoted to it. The groove 14 for the folded edge of the hat and the groove 21 for the sweat band are of about the same depth, the groove 16 between them for the reed and reed cloth being deeper. The inner walls of the grooves 16 and 21 are broken away near the needle, and the end of the lever 20 is grooved at 23 to receive the reed cloth and reed. The grooves 23 and 16 are bevelled at 25 and 19, to form a wider part to accommodate the lapped ends of the reed cloth.

Loop-stitching machines.—Pivoted to a frame N are the oscillating shaft *p* carrying the needle R, and the looper 2, Figs. 4 and 5, operatively connected with the shaft *p*. The frame N is moved vertically by a cam so as to occupy its lower position during one stitch, and its upper position during the next two stitches. A lever 6, having a loop-retaining hook 8 and pivoted to the frame N, is engaged by a fixed stud 10 so as to be moved when the frame N is moved, retaining or releasing a loop according as the frame N is raised or lowered. Fig. 3^a shows the manner in which the parts of the hat are connected. The stitches *c*, made when the frame N is in its lower position, connect the sweat band B, reed cloth C, and edge *a* of the hat; the upper stitches *d* pass over the sweat band and edge of the hat, and secure the reed snugly in the bight of the reed cloth. The loops 1, 2, and 4, Fig. 2^a, are laid between the reed cloth and the edge of the hat, and the part 3 of the thread against the inner side of the reed cloth and above the sweat band. The ends of the reed cloth are lapped as shown in Fig. 4^a.

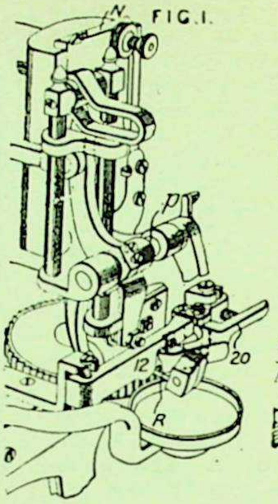


FIG. 1.

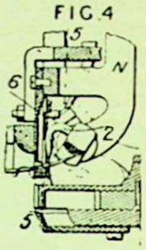


FIG. 4

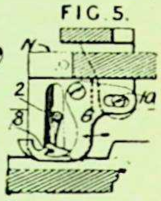


FIG. 5.

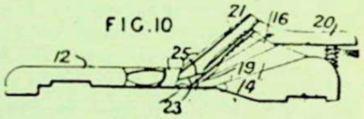


FIG. 10

8592. **Dorman, W. H.,** [*Walter, H.*]. April 25.

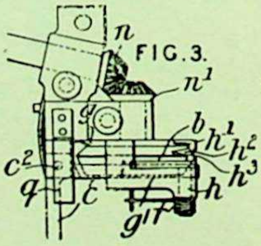


FIG. 3.

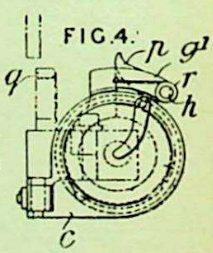


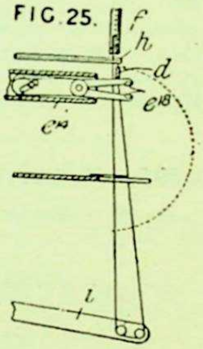
FIG. 4.

Lock-stitch hook sewing-machines; boot-sole stitching-machines.—The reel case *b*, having tapered sides, is held between a disc *g* with bevelled edge and an internally-bevelled ring *c* pivoted at c^2, the case *b* being prevented from rotation by a projection on it engaging a notch in the ring *c*. The disc g is oscillated by means of a cam lever having a toothed segment and by the bevel gearing n, n^1, and it is formed with an arm g^1 in which is pivoted at h the hook h^1, provided with a central projection h^2 and a notch h^3 to clear the needle. The hook takes the loop of thread drawn up by the hooked needle, carries it partially round the case b, and is then rotated to discharge the loop. This rotation is effected by the engagement of the cam arm p on the spindle h with a projection q, the arm p being normally held against the stem of the arm g^1 by a spring r. The invention is also shown applied to the machine described in Specification No. 23,267, A.D. 1892. In this case the hook is normally retained in its loop-taking position in a manner similar to that described above, but the hook is rotated to discharge the loop by the tension of the loop itself. This rotation is prevented before the right time by the engagement of an arm similar to the arm p with a circular guard partially surrounding the path of the hook.

8829. Allison, C. A., [*Kavenaugh, J. T.*]. April 27.

Tying or knotting.—Relates to a machine for making and stringing labels. The string is passed through the label by a needle f, and gripped on the under side by grippers d, which then turn upwards along the dotted line shown in Fig. 25, to lay the string over pins on the end of a lever i. The latter descends and draws out a loop of the string, and the doubled end of the string is then engaged by the hooked arms e^{18}. These draw the string into the tube e^{14}, which rotates to form a loop through which the arms e^{18} are advanced to grip the free ends of the string, which has been severed by shears h. A jerk of the lever i pulls the loop off the arms e^{18} over the cut ends of the string, and completes the knot. The various parts are actuated from two cam shafts in the machine.

FIG. 25.



9435. Gerlach, A., [*Rehwoldt, F.*]. May 4.

FIG. 17.

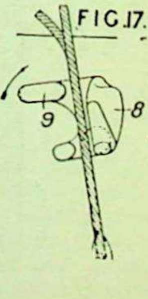
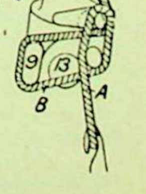


FIG. 20.



Book-stitching machines; knotted-stitch machines.—Relates to machines for sewing pamphlets or the like. The thread is drawn across the pamphlet by an upper gripper b, Fig. 9, and pulled through it in loops by hooked needles. The loop f is drawn through a fork 3, which then turns, forming a double loop through which the lower gripper 13 is passed to seize the thread end pulled down by the needle III, threading on its way the one or more loops e. On thread being drawn through the loops and tightened, a knot is formed at K. The fork 3, shown at the beginning and end of its rotation in Figs. 17 and 20, has a wedge-shaped projection 8 which separates the lower part A of the loop to receive the part of the loop wound on the projection 9, and form a loop B for the passage of the gripper 13. Fig. 2 is a side view of the machine. The upper gripper, tension, take-up, and scissors are carried on an upper arm 25. The upper gripper has spring jaws c, h, Fig. 6, which are closed when a loose ring i engages a fixed stop and is thus pushed over the projections h^1. The gripper is pivoted to a slide $f^{\times}$, and its rear end engages in a cam-groove which gives it a side motion to lay the thread in the needle-hooks. The thread passes through two fixed eyes 52, Fig. 9, and an eye 51 on the end of a lever 50, Fig. 2, by which the thread is tightened. The tension device comprises two discs 55 between which the thread passes and which are pressed together by a spring 56. The collar 61 holding the spring down is connected by levers &c. to the lever 50, so as to be raised to relieve the tension when the eye 51 descends between the eyes 52. Both the lever 50 and the slide $f^{\times}$ are operated from a cam-actuated slide 38. The lower gripper slides in a

FIG. 2. FIG. 6. FIG. 7. FIG. 5.

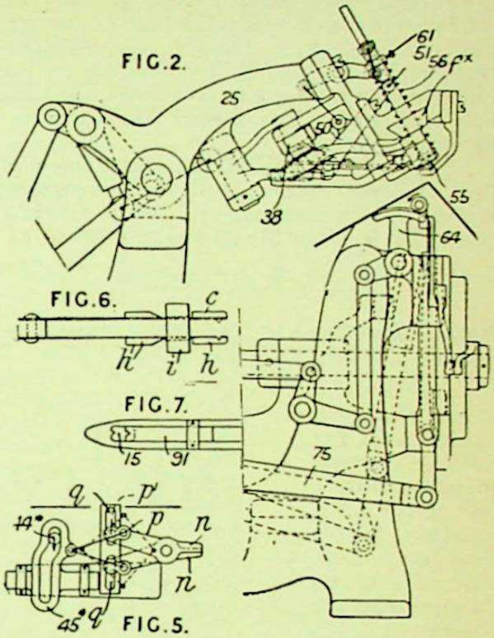
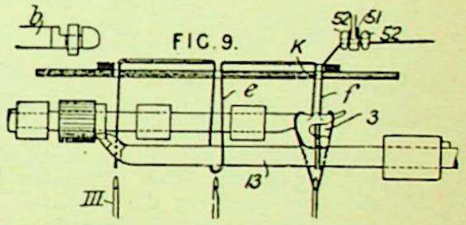


FIG. 9.



bearing which receives a slight oscillation so that the gripper jaws are raised at the end of their backward movement. The jaw 15 of the lower gripper, Fig. 7, is formed between its front end and a bar 91, and is normally closed by a spring. It is opened at the required time by a projection on the bar 91 engaging a fixed stop. The fork 3 is oscillated by a cam-actuated sector 64, and receives its longitudinal motion from a cam lever engaging a collar on its rear end. The needles are actuated by cam levers 75 &c.

Thread-cutters.—Each of the scissor levers n, n, Fig. 5, carries two pins p, p^1, of which p^1 engages in a slot q, and p is connected by a link to a slide 45× reciprocated by a pin 44× on the slide 38.

9940. Macdonald, J. K., [*Singer Manufacturing Co., A. G.*]. May 11.

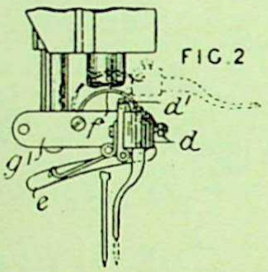


FIG.2

Hem - stitching machines; perforating-devices. — The punch or punches are carried in a block d pivoted at d^1 to the reciprocating bracket g^1, and held in operative position against a spring f by means of a spring catch e also pivoted to the bracket g^1. Thus, in turning a corner, the punches may be thrown out of action, into the position shown in dotted lines, by lifting the catch e. In a modification, a fixed punch is secured to the bracket g^1, and pierces a row of smaller holes alongside the holes made by the punches. It is grooved to allow the needle to reciprocate close to it, and thus may form the pivot round which the fabric is turned. In another modification, two punches, which can both be thrown out of action, are placed one behind and the other in front of the needle.

9981. Joseph, T. H., and Ehrenreich, J. J. May 11.

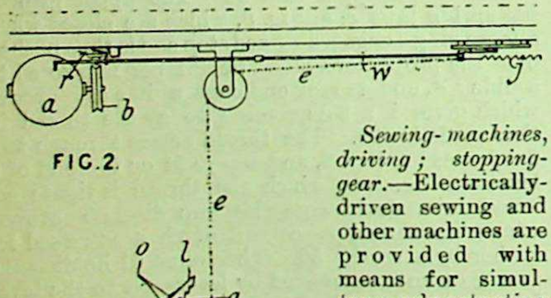
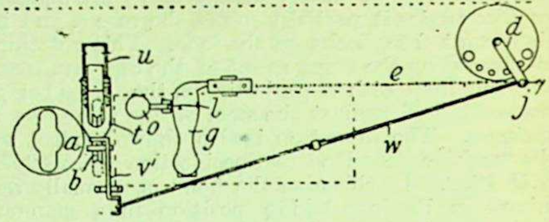


FIG.2.

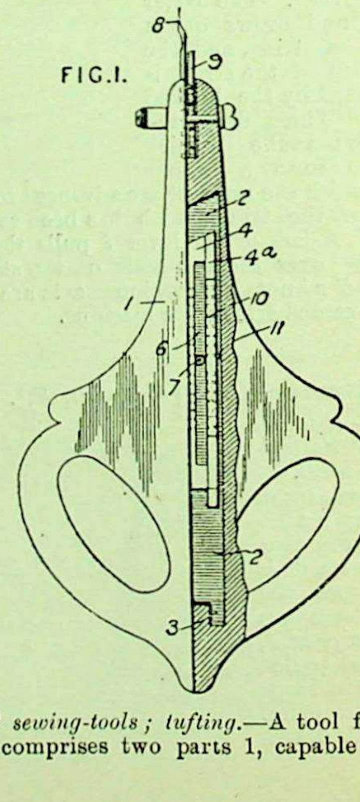
Sewing-machines, driving; stopping-gear.—Electrically-driven sewing and other machines are provided with means for simultaneously actuating the controlling-switch and the brake mechanism. Fig. 1 is a plan, and Fig. 2 an elevation, showing the motor a and its controlling-apparatus attached to the underside of the machine table. The handle d of the controlling switch is connected by a chain e to a pedal g, and by an adjustable rod w to the brake mechanism. When the pedal g is depressed, the switch handle d is moved over its contacts against the action of a spring j, and at the same time the hooked end of the rod w releases a cranked rod v^1 which has been holding on the brake against the action of a spring u. This spring then comes into play and, acting on the pivoted fork t carrying the brake r, moves the latter off the driving-pulley b. By means of a ratchet device l, acted on by a spring, the starting-pedal g may be detained in position for any desired speed. In order to stop the motor, the pedal g is released by a second pedal o, attached to the ratchet l, and the spring j then retracts the switch handle d into the off position, and through the rods w and v^1 applies the brake to the pulley b.

FIG.1.



9995. Roberts, J. T. May 11.

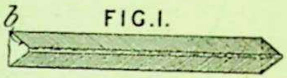
FIG.1.



Hand sewing-tools; tufting.—A tool for tufting fabrics comprises two parts 1, capable of sliding upon each other and carrying respectively a needle 8 and a holder 9 to prevent the withdrawal of the thread after the loop has been formed. One part is formed with longitudinal grooves 2, undercut at the front end and provided with recesses 3 at the rear end, and the other part is formed with ribs 4, which work in the grooves and engage with the undercut and recessed ends at the limits of the relative movement of the parts. The ribs have slots 6, through which passes a pin 7 for holding the parts together, and they may have also a series of holes 10, in any one of which can be inserted a pin 11 to engage with the pin 7 and limit the sliding movement. Lugs 4^a are formed on the ribs to pass through corresponding openings and engage with undercut portions at the sides of the grooves 2.

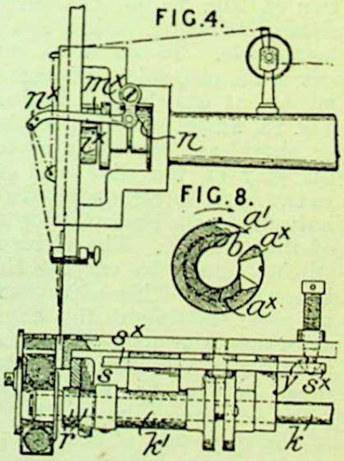
10,281. Worsley, G., Worsley, A. E., and Cree, F. May 16.

FIG. 1.



Lock-stitch shuttle sewing-machines.—A machine is described for winding thread into long cylindrical cops suitable for use in the revolving carriers or shuttles of lock-stitch sewing-machines. The cop is built up of a number of conical layers, is pointed at one end, and is hollow at the other, and the thread is unwound from the hollow or base end b by passing it through the central aperture of the cop.

10,282. Worsley, G., Worsley, A. E., and Cree, F. May 16.



Lock-stitch shuttle sewing-machines. — A large cop is carried in a curved tubular shuttle or carrier, Fig. 8, having a beak a^1 and a blunt tail $a^\times$ against which the driver presses, and a space b for the escape of the loop. The cop consists of a series of conical layers. The thread is drawn off from the hollow end through the centre, the cop remaining always of the same diameter but diminishing in length from its rear end. The shuttle may revolve on a vertical or, as shown, on a horizontal axis. The shaft k^1 carrying the driver is placed parallel to, but out of line with, the shaft k. Crank-pins on the adjacent ends of the shafts are connected by a short link, and the shuttle thus has a varying speed.

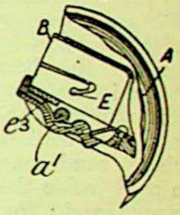
Needle-driving.—The needle-bar is caused to dwell near the lower end of its stroke, and for this purpose is driven by a crank-pin $m^\times$ engaging a cam-groove in a plate $i^\times$ fixed to the needle-bar.

Governing needle thread.—The take-up lever $n^\times$ pays out thread for the shuttle to enter the loop, and takes it up as the loop leaves the shuttle. It is driven by a cam n.

Feed.—The feed-slide s is operated by a double cam r, and the length of stitch is varied by adjusting the conical stop y for the feed-lever $s^\times$. In a modification, the feed-dog is carried on a lever vertically and horizontally pivoted, but operated and having its movement adjusted as above.

10,382. Macdonald, J. K., [*Singer Manufacturing Co.*]. May 17.

FIG. 2.

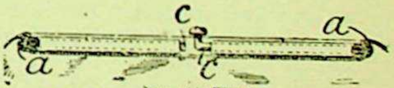


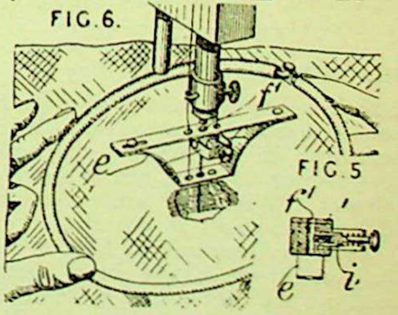
Lock-stitch shuttle sewing-machines.—Relates to machines having a fixed bobbin case and a rotary shuttle. The bobbin case B is arranged with the axis of its cylindrical bobbin transverse to the axis of the shuttle A, and is supported at one side of its axis on a pin a^1 on the shuttle, which is approximately concentric with the periphery of the shuttle.

Governing under thread.—The shuttle is provided with a device for intermittently relieving the tension of the under thread. This consists of a tension lever E, which is raised to release the thread during part of the oscillation of the shuttle by a cam on the pin a^1. A constant light tension is exerted on the thread by a spring e^3.

10,475. Ragen, W. May 18.

FIG. 3.





Darning; sewing-machine presser-feet; work-supports.—Consists of a darning-attachment for sewing-machines. The fabric to be darned is clamped within a ring a, Fig. 3, of crescent section, by a rubber-covered spring ring c. The presser-foot, which consists of a bent spring e, is carried on the needle, and secured thereto frictionally by means of a hole f^1 and spring pin i so that it can adjust itself into proper position.

11,088. Milward & Sons, H., and **Webb, T.** May 27.

Sewing - needles, grinding &c. Consists essentially of an endless band covered on its outside with emery or the like and running over a pair of pulleys, one of which is coated with rubber or other elastic substance. In place of or in addition to this rubber coating, an endless rubber band may be used inside the emery band; or, according to the Provisional Specification, the pulley bearings may be made to yield slightly. Fig. 2 shows the invention embodied in a machine for skimming or cleaning "points" before they are stamped for the eyes &c., c being the emery band and b^2 the upper of the two pulleys. The "points" d are pressed against the band by a block e, and are at the same time slowly rolled towards the hopper by slowly-rotating discs which press their ends against the block e. Fig. 9 shows a modification for setting glovers' needles, the needle being supported on a slot g^2 of the inclined rest g. In another modification, for grinding the points of ordinary needles, the needles are traversed obliquely across the band c by a feed-disc above it, their eye ends resting on a fixed support. The invention is applicable to other stages of needle manufacture, such as polishing the heads.

FIG. 2.

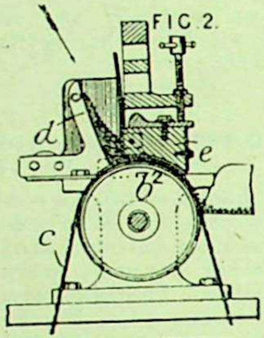
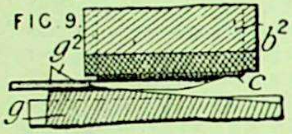


FIG. 9.



11,246. Wheeler, S. H. May 30.

Buttonhole - sewing machines; overedge - stitching machines.—Consists of improved cloth-clamp actuating-mechanism in buttonhole-sewing and other overedge-stitching machines, and is shown applied to a Wheeler & Wilson D^{10} sewing-machine. To the usual ratchet-wheel D, geared to the cam d^3 which effects the longitudinal feed, is secured a mutilated ratchet-wheel, not shown, both being operated from the cam lever C by the rods b^8, d^{18} respectively, and corresponding pawls. The plain and toothed parts of the mutilated ratchet-wheel correspond respectively with the operative and inoperative parts of the cam d^3, and thus the number of edge stitches is independent of the number of bar stitches. The to and fro movement of the clamp for the formation of the stitches is obtained from the lever c, pivoted on the same pin as the lever C and driven from the latter by springs c^6. Owing to this yielding connection between the levers C, c, the length of stitch can be regulated by a pattern cam, Fig. 5, in which engages a projection e^9, Fig. 13, on the underside of the cloth clamp, and which makes one revolution for each buttonhole. To allow of varying the length of stitch, the projection e^9 is carried on a slide e^{10}, the movement of which is limited by wedges h^2, h^3, Fig. 12, which, according as the stitch is to be long or short, are moved so as to increase or lessen the play of the slide e^{10}. The cam E is made in two parts corresponding to the two sides of the buttonhole, the part h^9 being adjustable by means of the screw h^6. The change in position of the stitches, caused by varying their length, can thus be corrected. This adjustment of the part h^9 at the same time alters the length of the bar stitch, since the wider part of the cam in which the projection e^9 moves during the bar stitching is comprised between the walls 1 and 3 of the fixed and movable parts of the cam E. To prevent jamming of the projection e^9 against the sharp corners of the cam E, the latter is driven from its shaft e^6 by a collar G and spring g^2, Fig. 7. The parts of the lever c with which engage the rollers 7, 8 on the springs c^6 are made slightly eccentric to the pivot c^1, so that the rollers move over these surfaces and thus reduce the pressure on the cam E. The springs c^6 are adjusted by the stops 12 so that, when the levers c, C are central, the rollers 7, 8 just touch the lever c.

FIG. 12.

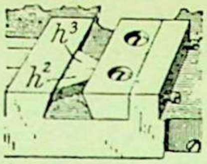


FIG. 5.

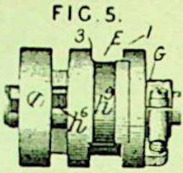


FIG. 7.

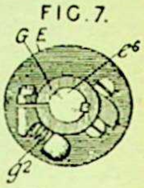
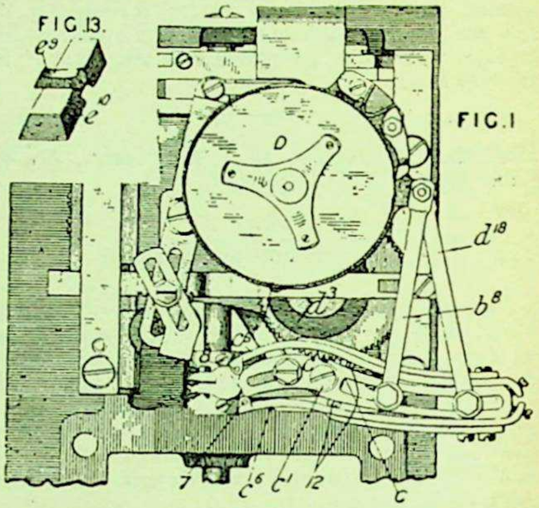


FIG. 13.

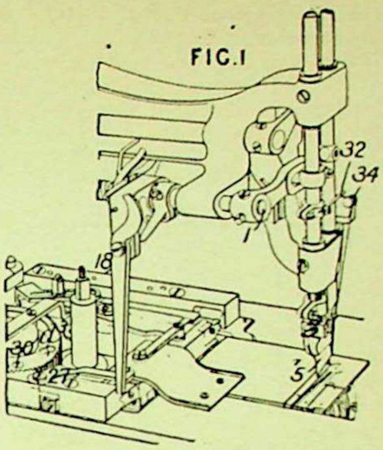
FIG. 1.



11,247. **Wheeler, S. H.** May 30.

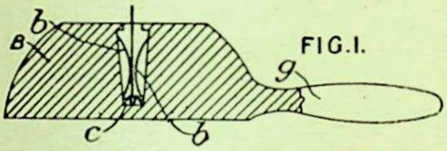
Buttonhole-sewing machines; governing needle thread.—Consists of means for preventing the needle thread from getting in the path of the cutter when cutting the buttonhole slit, and is described in connection with a Wheeler & Wilson D^{10} sewing machine improved as described in Specification No. 11,246, A.D. 1899. A finger 32 is fixed to the cutter-bar as shown, or formed on an extension of the rock-shaft 1, or otherwise arranged so that, on the descent of the cutter 5, it depresses the thread stretched over the guide 34 and so takes up the needle loop. The cutter is thrown into action by means of a bell-crank lever 27, which engages the lever 18, and which is operated at the right time by a pin 30 on the feed-cam d^3.

FIG. 1



11,874. **Petersen, M.** June 7.

FIG. 1.

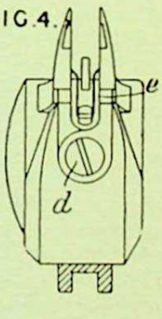


Needle-threaders.—The needle is held in a block B, which has a handle *g*, between two springs *b* with its eye projecting through a hole in the piece *c* connecting the springs, and in line with two holes tapering towards it from opposite sides of the block B.

11,992. **Scetrini, G. H.,** and **Bridger, H. K.** June 8.

Lock-stitch shuttle sewing-machines; needles, hook, cast off devices for.—The shuttle hook is made in two parts, pivoted at *d* and held apart, as shown, by a spring *e*. The race is formed so as to hold the parts together to form a single hook, except just after the point where the loop is taken, a gap in the race then allowing the parts of the hook to separate, and so cast-off the loop from the needle.

FIG. 4.



12,602. **Straeten, C. van der.** June 16.

Boot-sole stitching-machines; feed; chain-stitching machines.—Relates to machines for turn-shoe work. The feed-dog or work-carrier 4 makes all its movements in a vertical plane like the needle. It is formed on an elbow lever 5 pivoted at 6 to a vertically-movable slide actuated by a cam on the shaft 12. A sleeve on the shaft 12 oscillated by a second cam is fitted with a crank 18 from which the lever 5 is oscillated. The combination of these two movements gives the desired motion to the dog 4. A lateral feed-ring 26, carried on the hook shaft and pressed forward by a spring, is at the same time rotated from a ratchet-wheel 21 operated by a pawl on the crank 18. The hook, shown in plan and elevation in Figs. 5 and 6, is formed with an opening 33 into which the needle dips.

FIG. 2.

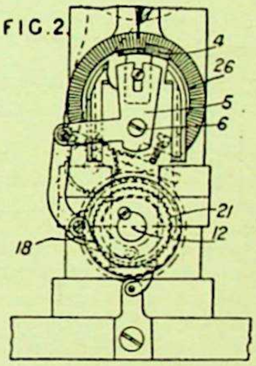


FIG. 5.

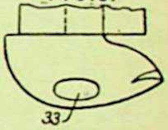
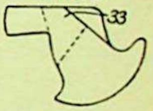


FIG. 6.



12,680. **Stief, F.** June 17.

Marking work for sewing.—Relates to a tool for punching out buttonholes for boots &c., and other like holes, and simultaneously marking out the positions of the stitches round them. The body A of the punch carries the cutter A^1, the marker B, and an outer sleeve C, which determines the depth to which the points of the marker enter the material. The parts are secured together by screws *d*. The adjustable pin *c* serves as a guide to regulate the distance of the holes from the edge *f* of the material. The tool may be used by hand, or the shaft x may be formed to fit the tool-holder of a punching-machine.

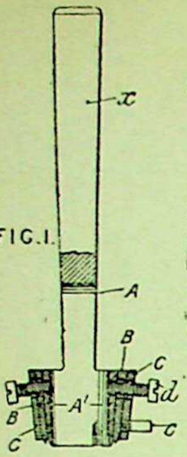


FIG.1.

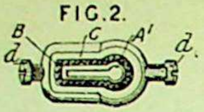


FIG.2.

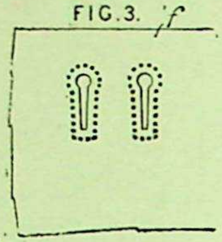


FIG.3.

12,856. Stickerei Feldmühle vorm. Loeb Schoenfeld & Co. Jan. 5, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].

Embroidery.—Relates to perforating-devices for shuttle embroidery machines. The perforators are carried adjacent to the needles, and can be moved independently without stopping the working of the needles. Fig. 2 shows one of the perforators b. It is of pyramidal form, and may move parallel with the path of the needle, and with one face parallel with the needle or formed with a groove to embrace the needle; or it may move in a path inclined to that of the needle. The mechanism for operating the perforators, Fig. 7, comprises a cam lever k in a slot in which one end of the link n may be adjusted by the lever r to vary the stroke of the perforators. The perforators may be thrown out of action by withdrawing the pin i from its cam-groove by means of a lever or otherwise.

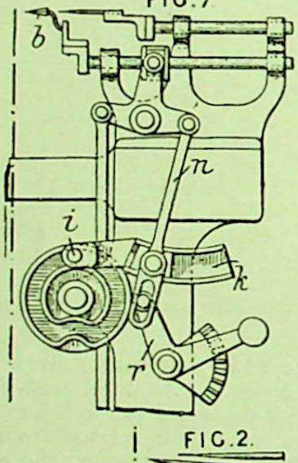


FIG.7

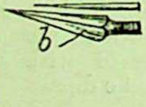


FIG.2.

12,868. Dearborn, C. A. June 20.

Blind-stitching machines; overedge-stitching machines.—Relates to machines for such work as seaming the lower edges of trousers, skirts, &c. where a blind-stitch is desirable. The frame, which is designed to allow of easy access to the parts, comprises the arm F supporting the spring-controlled feed-wheel bracket I, arm C supporting the main shaft and extended into an arm E carrying the needle shaft t, looper rod D^1, and fixed presser-foot n. The rod D^1, which slides in a swivelling bearing L^1, receives a combined turning, reciprocating, and rocking motion from the pin H^1 of an inclined crank G^1 on the main shaft J, Fig. 5, the rod D^1 and pin H^1 being connected by a yoke J^1 and sleeve I^1. The looper shaft is bent at N^1 and O^1, Figs. 7 and 10, in planes perpendicular to each other, and terminates in prongs P^1, Q^1, having shoulders R^1, S^1. The feed-wheel O has the cylindrical part h, groove k, tapered part g, teeth i, and a ring j which fits in a corresponding groove m in the presser-foot to bend the fabric, and thus allow the curved needle r to form a blind stitch. In operation, the looper, moving forwards and downwards along the right-hand side of the seam, takes the needle loop, Fig. 7, and pushes it against the shoulders R^1, S^1. It then rises, turns axially, and recedes and descends so as to present the loop, stretched across the space between the prongs, to the needle on the left side of the seam, continuing its motion till the loop slips off, Fig. 10. A reverse axial turn brings the looper back to its starting position.

FIG.5.

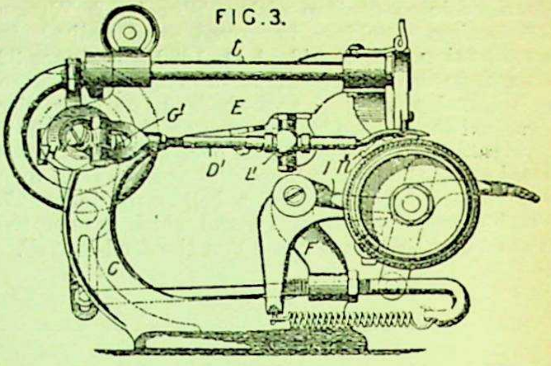


FIG.3.

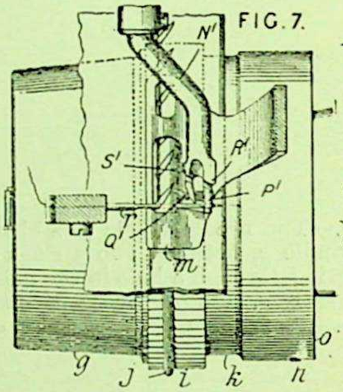


FIG.7.

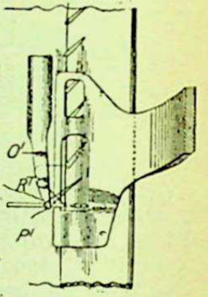
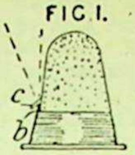


FIG.10.

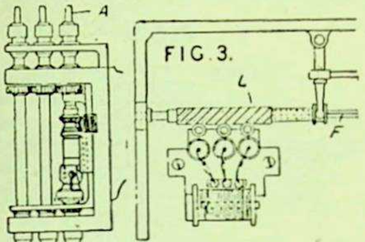
12,990. **Burns, R.** June 22.



Thimbles.— Consists in fixing to, or forming integral with, a thimble a cutting-device formed of a metal shank *b* having an arm *c* projecting downwardly at an acute angle, and with its inner edge sharpened.

13,108. **Guilmin, E.** *Feb. 14.*

FIG 3.



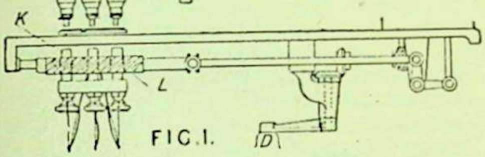
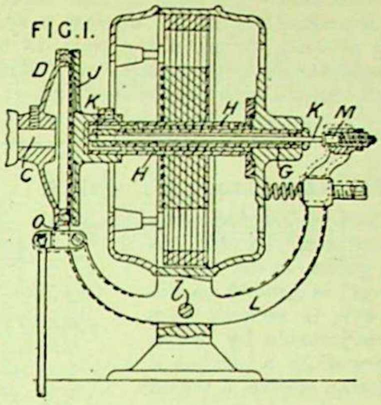


FIG.I.

Ornamental-sewing machines ; multiple-needle machines ; embroidery, machines for. Means for effecting the repetition of designs are described in connection with a Bonnaz sewing and embroidery machine. The three or more needle-bars A are geared together by idle spur-wheels, not shown, so as to be equally rotated from the usual crank D, to follow the line of sewing. The corresponding-rotation of the loopers K is effected by a quick-pitch screw L carried on a squared shaft F, Fig. 3, geared with the crank D, the necessary automatic motion of the loopers being effected by the reciprocation of the screw L.

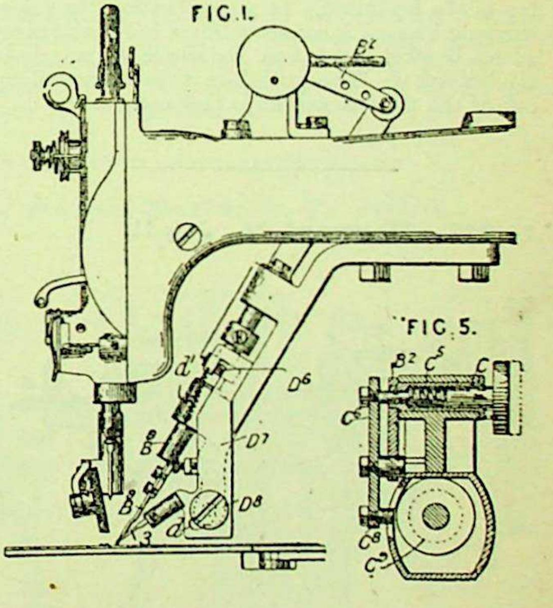
13,804. **Justice, P. M.,** [*Emerson Electric Manufacturing Co.*]. July 4.

Sewing-machines, driving ; stopping-gear.—Relates to means for driving the shaft of a piece of machinery from the armature of an electric motor, and for simultaneously disengaging the motor and stopping the driven shaft, the arrangement being specially applicable to sewing-machines. The armature of the motor is mounted on a sleeve H, running on a fixed hollow shaft G, and carrying at one end a friction disc J, which can be brought into engagement with a friction-wheel D on the driven shaft C by moving the armature longitudinally on the shaft G. This movement is effected by a lever L, pivoted at *l* to the motor frame, and carrying at one end a spring-pressed thimble M, bearing against a rod K in connection with the disc J. On releasing the lever L, the return movement of the armature is brought about by the attraction of the field magnets of the motor.



The off movement of the lever L applies a brake O to the friction-wheel D, and quickly stops the driven shaft. The means employed for shifting the armature may be modified.

13,820. **Wheeler, S. H.** July 4.



Sewing-machines, trimming or cutting in.—The cutter-bar B^8, Fig. 1, is reciprocated in an inclined position, so that the lower piece of material is trimmed off within the edge of the upper folded piece, as, for instance, in trimming the linings of boot tops. A guide 3, in contact with the edge of the upper material, prevents the material from being injured by the cutter B^9. The guide 3 is fixed to an elbow lever D^7, pivoted loosely by a cam slot *d* on a stud D^8, and, when in its operative position, held down by a spring d^1. When the cutter-bar is moved to its inoperative position, as described below, the pin D^6 on it lifts the lever D^7 and the guide 3; the guide is at the same time moved to the right owing to the shape of the slot *d*. The cutter-bar is connected to an elbow lever B^2, the short arm of which is actuated by a lever C^6, Fig. 5, operated by a cam C^9 and secured to a shaft C. To throw the cutter out of action, the shaft C is pushed to the left against a spring C^5, thus withdrawing the pin C^8 from the cam C^9, and allowing another spring, not shown, to turn the lever C^6 so that the pin C^8 rests clear of the cam-groove, and the cutter is raised clear of the work-plate. The throat plate is formed with an inclined slot to co-operate with the inclined cutter

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14,092. Nicholson, W. July 8.

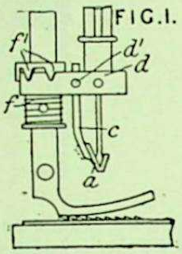


FIG. 1.

Needle-threaders for sewing-machines. A trough-shaped guide *a*, by which the thread is guided to the needle eye, is secured to a rod *c*, adjustable by means of a screw d^1 in a bracket *d* pivoted on a sleeve *f*, which may be secured to the presser-bar. The bracket *d* is pressed upwards by a spring so that recesses on it engage with projections f^1 to hold the guide either in its working position or turned to the rear out of the way. The bracket *d* and the inner side of the guide *a* are grooved to engage with the needle, and the correct vertical position of the guide is assured by the engagement of the lower end of the needle-bar with the tapered top of the bracket *d*. In a modification, the guide-carrying bracket is connected by a horizontal pivot with a bracket pivoted on the sleeve *f* similarly to the bracket *d*. The guide can thus be turned up out of the way, as well as to the rear.

14,273. Hayward, N. July 11.

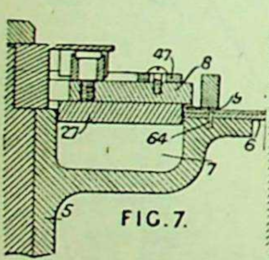


FIG. 7.

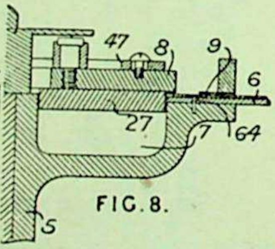
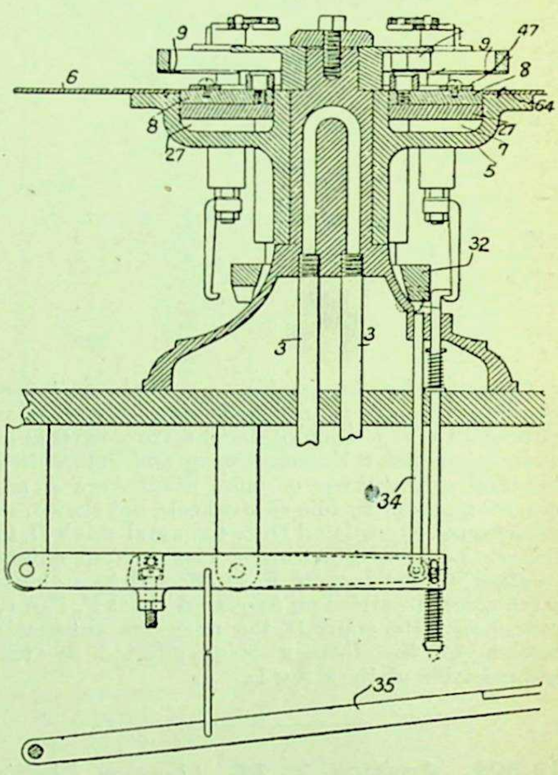


FIG. 8.

Folding-instruments.—Relates to a machine for folding such materials as shoe uppers. Fig. 3 shows a sectional elevation of the machine, which is provided with a rotating table 5 carrying two sets of folding mechanism, one set being turned aside with the material folded in it while the other operates on a second piece of work. The standard is hollow, and has steam circulated through it by pipes 3, 3. The table 5 has two opposite work-plates 6, and is recessed at 7 to receive the folding-devices 8, 8. The work is placed on a table 6 against a gauge 47, after which the clamp 9 is lowered on to the material by depressing the treadle 35 against the pull of springs. This movement of the treadle by

FIG. 3.



means of a rod 34 and bar 32 raises the folder 8 into the position shown in Fig. 7. When the folder is in this position, it is clear of pins projecting through the carrier 27, and is pushed outwards by springs, as shown in Fig. 8, to turn over the edge of the work. The treadle is now released, and the clamp 9 is lifted by a spring, after which the table is rotated to bring the other set of folding-appliances over the treadle gear as the table rotates. One cam draws the clamp back, another pulls back the folder 8, and a third releases the work, which has been retained in the other folding device. Pins 64 projecting from the table 6 indent the work as an indicator to the sewing-machine attendant.

14,296. Lake, W. R., [*Catenacci, E., Petrini, C.,* and *Petrini, R.*]. July 11.

FIG. 5.

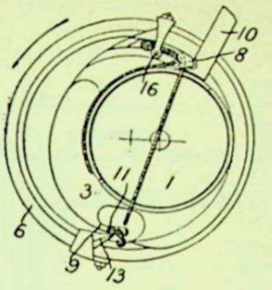
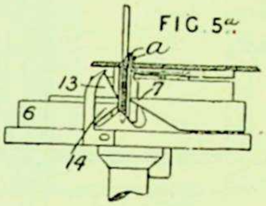


FIG. 5a.



Lock-stitch hook sewing-machines; governing under thread.—The machine is designed to use a relatively large bobbin. The shuttle or thread case 3, carrying the bobbin 1, is supported on an oscillating carrier, and has a groove engaging with a ring 6 on the carrier. The thread case is prevented from having more than a slight movement by the engagement of the projections 8 and 9 with the stop 10 and needle guide 11 respectively. The under thread is pulled off before the stitch is made by a pin 16 carried by the carrier. The Figures show the needle loop *a* on the point of being taken by the double beak 13, 14 of the carrier, to be drawn by this beak over the beak 7 of the thread case and so round the thread case. The part 14 forms part of the ring 6. One method of oscillating the carrier is described.

Governing needle thread.—It is stated that means may be used similar to those described above in connection with the under thread for pulling off the needle thread.

14,367. Singer Manufacturing Co. and **Pollock, J. G.** July 12.

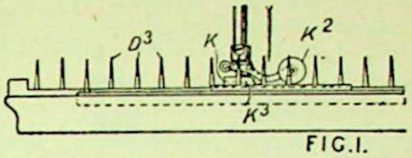
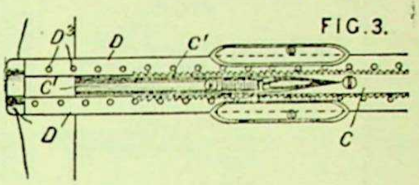


FIG. 1.

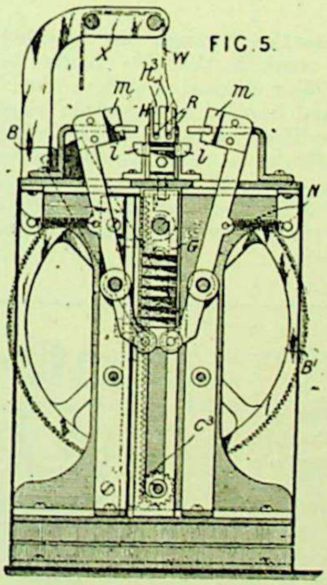
FIG. 3.

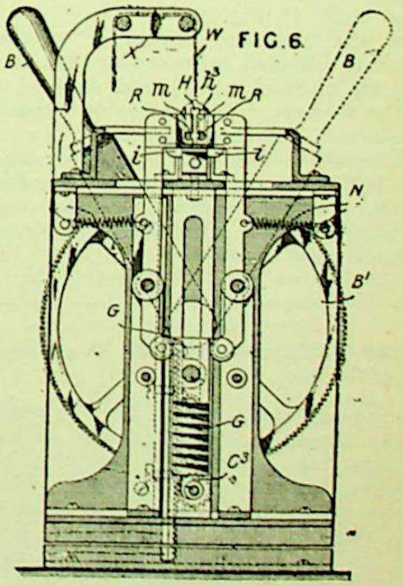


Sewing-machines, tufting in; work-supports; presser-feet; feed.—Consists of means for sewing together short lengths of feathers, chiefly for making neck boas. The needle preferably has a cross motion to produce over-seaming stitches. In the centre of a groove in the work-plate is fixed a metal strip C forming the throat plate, on each side of which slide strips D, connected at their ends, and forming a carriage to which the feathers are secured by pins D^3. The carriage is fed along by spring pawls carried on the feed-lever and engaging in teeth on the inner edges of the strips D. The feathers are held down by a metal strip resting between the strips D and secured to an extension of the table. To the presser-foot K is hinged a spring lever to which are pivoted two discs K^2. The presser-foot and the throat plate are hollowed as shown at K^3 and C^1.

14,409. Bültzingslöwen, B. von, Auw, A. von, and **Montague, F.** July 12.

Incandescent-lamp mantle sewing-machines.—Relates to machines for folding and stitching the heads of mantles. The mantle-blank or stocking W is so suspended from the hook X that its head can be placed over the central folder H, which consists of a number of parallel plates having transverse openings h^3 for the passage of the needles R and supplemented by adjustable lateral supports *i*, J, J^1. Upon moving the hand-crank B in the manner indicated by the full and dotted lines in Fig. 6, the pinions B^1, C, C^3 and the rack E^1 cause the stepped cam G to actuate the side folders *m*, Figs. 5 and 6, and project them successively in pairs between





the plates of the central folder H, thereby folding or corrugating the mantle-blank W as shown in Fig. 14. By means of the pinions B^1, p^4 and the reversed screw-threads p, p^1 on the common spindle P, the needles R and their holder Q are moved forward through the folded head of the mantle-blank W as shown in Figs. 1 and 14. The thread r^4 is then placed in the hooked ends r^1 of the needles R, and is retained therein by the spring latch r^2, Fig. 20, during the backward movement of the needles through the mantle-blank, Fig. 15. During this movement, effected by reversing the hand-crank B, the side folders m are released from the blank W by the stepped cam G, and restored to their original positions, Fig. 5, by the springs N. Before use, the threads r^4 are preferably twisted and knotted as shown in Figs. 39 and 40, to facilitate the formation of the suspension loop. In a modification, in which the central folder is moved vertically and the side folders both vertically and laterally to facilitate the manipulation of the mantle-blank, the side folders are actuated by cylindrical cams, and ordinary needles are used and reciprocated by a screw working within a threaded non-rotating box or sleeve. Platinum or other wires may be used instead of the threads r^4, and other variations in the details of construction and the method of operation may be made.

FIG.14.

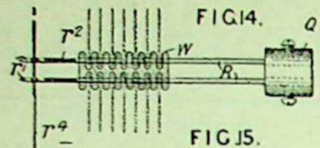


FIG.15.

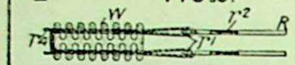


FIG.20.

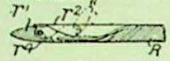


FIG.1.

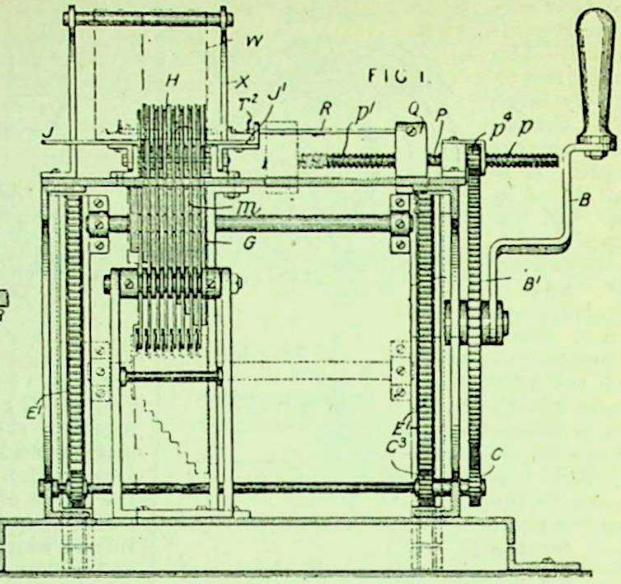


FIG.39.

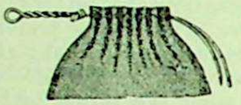


FIG.40.

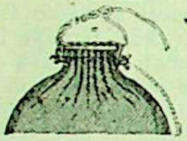
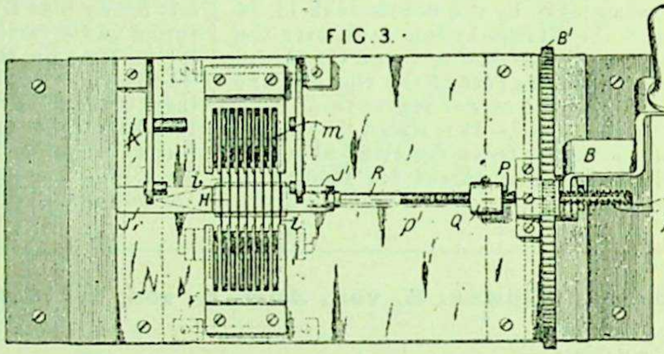


FIG.3.



14,524. Macdonald, J. K., [*Singer Manufacturing Co.*]. July 14.

Sewing-machine thread-cutters for removing the surplus thread between groups of stitches in machines for sewing on buttons, buttonhole machines, &c. The invention is described in connection with a button-sewing machine similar to that described in Specification No. 30,183, A.D. 1897. The presser-foot, shown in elevation in Fig. 4 and in horizontal section in Fig. 5, is

FIG.4.

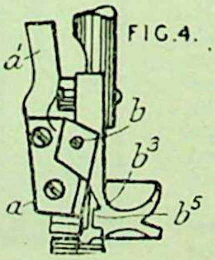
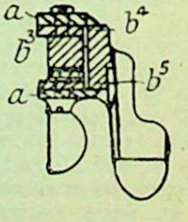


FIG 5.



formed with surfaces b^4, b^5 to co-operate with cutting-blades a fixed to a lever a^1 pivoted at b to the presser-bar. In the presser-foot is a slot b^3 into which the thread is drawn by the rising of the needle just before cutting takes place. The lever a^1 may be operated by hand, or automatically from the cam lever which operates the button-feeder.

14,545. **Cornely, E.,** and **Cornely, R.** July 14.

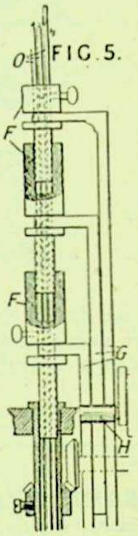


FIG. 5.

Embroidery, machines for. Relates to the machines described in Specifications No. 2482, A.D. 1877, No. 400, A.D. 1879, and No. 2483, A.D. 1882, in which a number of parallel rows of stitches are made from a single thread. The hook needles, instead of being attached to a single needle-bar, are operated independently, so that the loops are drawn through the material one after the other, each needle thus drawing freely the thread it requires. Fig. 5 shows three needle-bars o, each fitted with a tube F actuated by a heart slide G and pin H. The tubes F telescope together, but are prevented from relative rotation by flats formed on the engaging parts. The above improvements may also be applied to machines with needles working underneath the material as described in Specifications No. 4603, A.D. 1893, and No. 21,210, A.D. 1895, in order to sew braid, cord, beads, &c. to the material.

15,137. **Loeb, R.** July 22.

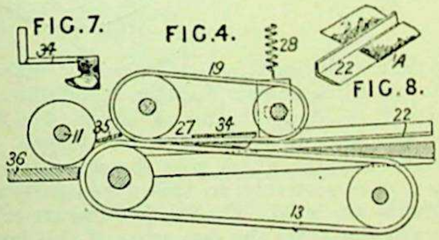


FIG.7. FIG.4. FIG.8.

Folding-instruments.—Relates to a machine for folding and ironing the edges of handkerchiefs and the like, preparatory to sewing. Fig. 4 shows a longitudinal section of the machine, Fig. 7 an end view of the folder 34, and Fig. 8 a perspective view of the first folder 22. The edge A of the handkerchief is turned over the folder 22, and is carried forward by the endless band 19, and the folder 34 turns the edge underneath the fold. The folded handkerchief is carried on the endless band 13 beneath the guide 35 and the ironing-roll 11, and delivered on the table 36. The resilient end 27 of the folder 22 is kept in contact with the band 19 by the spring 28. The ironing-roll is preferably driven at a different rate to the band 13, and is heated by contact with it.

15,202. **Thompson, W. P.,** [*Funcken, J.*]. July 24.

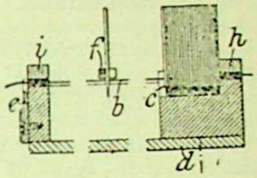


FIG. 2.

Sewing - needles; sewing - machine needles. — Consists of means for polishing the eyes. The polishing - threads, on which the needles are strung in any desired number, are stretched across a box d, and the needles are rubbed to and fro, one row at a time, by means of a clip. The threads b are stretched between clips h, i, and at one end pass through grooves c, and at the other through a comb e having teeth corresponding with the grooves c. In operation, the outside needle of each row is slid up to a comb f, which holds them in line to receive the clip, and which is afterwards turned out of the way to allow of the two and fro movement of the needles.

15,649. **Nordmann, M. J.** July 31.

FIG. 39.

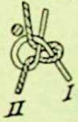


FIG. 36.

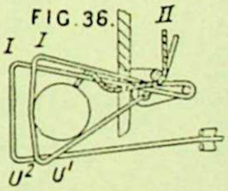
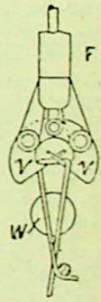


FIG. 15ᶜ



Tying or knotting.—Relates to a method of and apparatus for tying, knotting, looping, or twisting together two threads, specially applicable for binding and securing hanks of yarn. The hanks of yarn III having been wound on the reel, the ends of the binding-threads I, II are made fast to hooks thereon, the under thread I being carried by a spring reel D, and the upper thread by a reciprocating shuttle B. By means of a pair of forked fingers A^1, A^2, provided with subsidiary hooked fingers a^1, a^2, the under thread is drawn between two hanks and formed into a loop as shown in Fig. 26^a. The shuttle carrying the upper thread is now passed through the loop, and the threads are drawn tight against the frame Z by the lever and guide C. In the next reciprocation of the fingers A^1, A^2, the loop is formed by twisting the forked fingers in the opposite direction, and, the shuttle being also passed through the loop on its return journey, a double knot such as that shown is formed when the loop is released. If desired, a strand of a yarn III may be bound between the two portions of the knot. Figs. 30, 31, and 32 represent various methods of securing together a number of hanks of yarn. In Fig. 30, a tight double knot is shown as formed on each side of each skein or hank. In Fig. 31, loops are formed in the lower thread, through which the upper thread is passed, a tight knot being formed at each end only. In Fig. 32, the threading of the upper thread through the loops of the lower one have been effected in such a manner as to produce the effect of twists or loops on each side of the hank threads. Mechanism is provided for operating the several parts, and for automatically moving the tying or knotting mechanism along the length of a reel. Fig. 15ᶜ shows another arrangement of rotating and reciprocating fingers *v* for forming a loop in the lower thread for the passage of the shuttle W carrying the upper one. The shuttle is carried through a loop by a bow-shaped oscillating and sliding guide, the opposite ends of the bow being provided with catches for engaging with the shuttle. Normally the catch at one end only is engaged with the shuttle. When the free end of the shuttle has passed through the loop, the catch at this end engages with the shuttle, while that at the rear end is released, after which the shuttle may be drawn completely through the loop. Fig. 39 shows a "net knot," which is formed by passing the shuttle first through a loop U¹, Fig. 36, and then in the opposite direction through this and also through a second loop U², two sets of loop-forming fingers being required when forming this kind of knot.

FIG. 26ᵃ

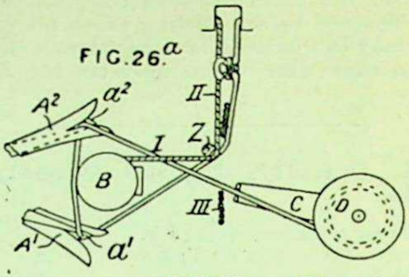


FIG. 30.

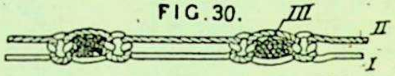


FIG. 31.

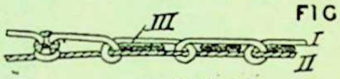
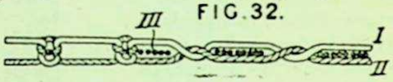


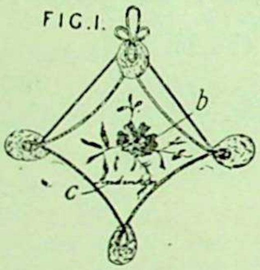
FIG. 32.



15,759. Kupfer, L. Aug. 1.

Embroidery.—Relates to pincushions, pocket-handkerchief bags, sachets, and similar fancy goods. The floral or other ornament *b* is executed in embroidery, but the inscription *c* is printed in gilt letters instead of being, as usual, embroidered.

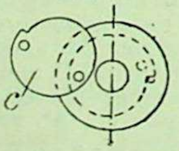
FIG. 1.



16,278. Wynne, E. W. Aug. 10.

Needle cases; sewing-machine bobbins.—The central hole of a sewing-machine or other thread bobbin is rendered adaptable or contain needles by fitting it with shutters *c* sliding across, or pivoted to, its ends. To accommodate needles of greater length than the bobbin, one of the shutters is replaced by a hollow cap capable of sliding in the hole.

FIG. 2.



16,281. Macdonald, J. K., [*Singer Manufacturing Co.*]. Aug. 10.

FIG. 1

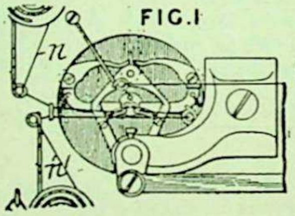
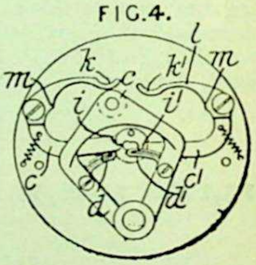


FIG. 4.

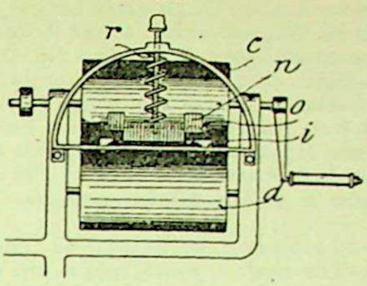


Buttonhole-sewing machines.—Consists of improved stitch-forming mechanism for the production of pearl stitch. Figs. 1 and 4 show underside views. The loopers *d*, *d*¹, of equal length, each have an eye through which pass the separate lower threads *n*, *n*¹ respectively, so that three instead of two threads are used. On the looper-carrier is a roller *c* which engages the cam arms of the hooked spreaders C, C¹, the hooks *i*, *i*¹ on which, Fig. 4, are respectively arranged to engage the threads *n*¹, *n* carried through the needle-thread loops at different times by the loopers *d*¹, *d*. The spreader cam-arms, which are formed with shoulders *m* and concave parts *l*, have in addition convex tips *k*, *k*¹, so that the spreaders may be moved slightly to one side at the beginning of their motion, in order that the hook *i*, for instance, may be clear of the thread *n*, which it is not intended to engage as the latter is carried past it by the looper *d*, Fig. 4.

16,305. Fuchs, B., and Makel, L. Aug. 10.

Folding-instruments. — Consists of an improved machine for folding the edges of ribbons, tapes, and the like. The tape &c. is held down between the adjustably-mounted folders *i*, by a block which consists of a number of plates *n* adjustably carried on a bolt *o*, and depressed by a spring *r*. The tape &c. is drawn through the folders, and pressed, by rollers *c*, *d*.

FIG.1.



16,350. Molitar, M., and Kern, F. Aug. 11.

Needle-threaders.— The ends of a horse-shoe magnet *a* are provided with pole-pieces *b*, and secured together through a separating brass wedge *c*. A conical opening *e* is formed in the wedge and pole pieces, and terminates in a small hole opposite which the needle eye is positioned by a spring lever *g*. The lever also serves to secure the thread after the needle is threaded.

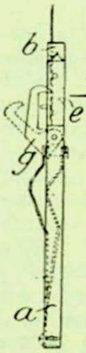


FIG.2.

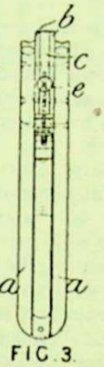


FIG 3.

16,693. Macdonald, J. K., [*Singer Manufacturing Co.*]. Aug. 17.

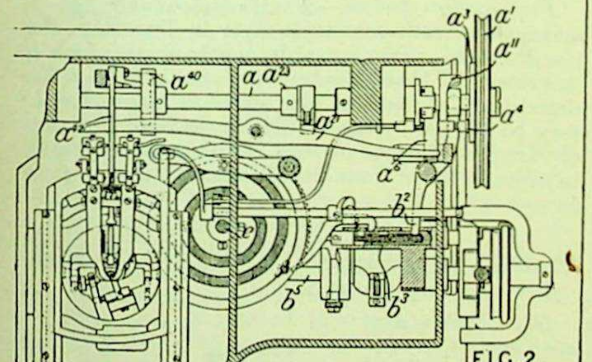


FIG.2.

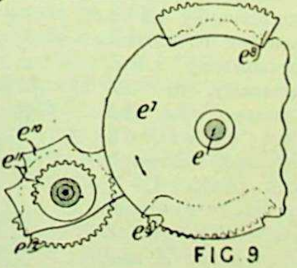


FIG 9

Buttonhole-sewing machines. — Fig. 2 shows a plan with the bed-plate removed. The needle-bar, in which the needle is eccentrically held, and the turret carrying the lower needle and loop spreader, are rotated simultaneously, for producing the stitching round the ends of the buttonhole. The spindle *e*, Fig. 2, which rotates uniformly during the stitching, is connected by two sets of the gearing shown in Fig. 9 with the needle-bar and turret. The toothed segments e^8, e^9, having different radii, engage with corresponding segments e^{11}, e^{12} on the needle-bar or turret shafts, which are held stationary when the toothed segments are not in engagement by means of the discs e^7, e^{10} shaped as shown. Figs. 13 and 14 show a plan and vertical section of the sewing-mechanism. The lower needle s^5, which passes

FIG.13.

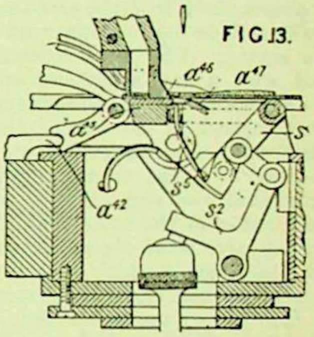


FIG.14.

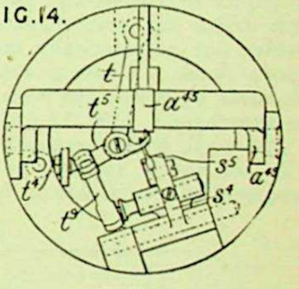


FIG.17.

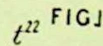


FIG.18.

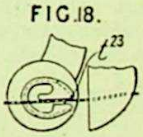
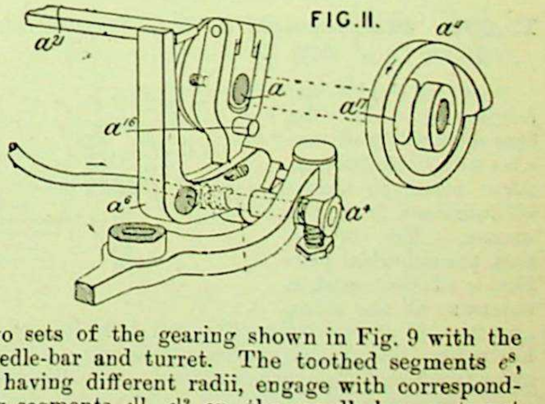


FIG.11.

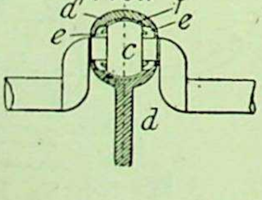


through the buttonhole slit, is carried on an arm s^4 operated from the bell crank s^2 by a toggle connection, the needle thus receiving a dip after its upward motion. Each needle alternately passes through the thread loop of the other. The loops are spread by a spreader, pivoted on a link t and having an arm t^5 jointed to a link t^4 which is connected by a link t^9 and ball joints to the arm s^4. The spreader is thus oscillated and also moved bodily.

Buttonholes, cutting ; work-supports ; stopping, automatic.—The shaft a, which makes one revolution at a time, as described below, actuates the slit-cutter from the eccentric a^{23}, and the cutter-block and throat-plate from the cam a^{40}. The cutter-block a^{46} and throat-plate a^{47}, which are connected together at an angle as shown in Fig. 13, are carried on a bar a^{45} pivoted to the turret. On rotation of the shaft a, the cam rod a^{42} pushes the cutter-block into the position shown in Fig. 13, for the slit to be cut, after which it is withdrawn by a spring. The loose driving-pulley a^1 is provided with a cam-groove a^3 and a cam face a^{11}. On depressing the starting-lever, a pin a^4, Figs. 11 and 2, carried in one arm of the elbow lever a^6, is pushed into the cam-groove a^3, which thus moves the lever a^6 so as to allow the clutch pin a^{16} to spring into the slot a^{17} and rotate the shaft a. The lever a^6 at the same time causes the lever a^{21} to close the work-clamp levers by engagement with the toggles which connect their outer ends. Just before the shaft a completes its revolution, the cam a^{11}, by means of the lever b^2, moves the belt shifter b^3 to start the rotation of the shaft b^5 which drives the sewing-mechanism. Means are provided for automatically stopping the shaft b^5 without shock. A cam on the shaft b^5 operates a rock shaft by which the work clamps are opened. The throat-plate, Figs. 17 and 18, has a groove t^{22} for the cord which strengthens the buttonhole to lie in, and a slot t^{23} by which this cord is disengaged on completion of the buttonhole.

17,092. Macdonald, J. K., [*Singer Manufacturing Co.*]. Aug. 23.

FIG. I.



Sewing - machines, lubricating. — In the case of high-speed machines, centrifugal force tends to throw off lubricant from the cranks. To obviate this, the spherical portion c of the crank is cut away at the sides, and the end of the connecting-rod d and its cap d^1 are made to embrace it, forming channels e at the sides in which lubricant is retained. The channels e are connected by grooves f in the end of the connecting-rod and in the cap. When the crank is in motion, centrifugal force causes the lubricant to circulate.

17,094. Macdonald, J. K., [*Singer Manufacturing Co.*]. Aug. 23.

FIG. I.

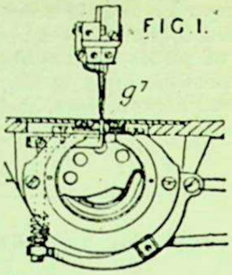
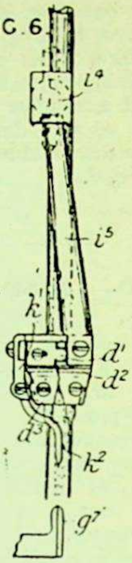


FIG. 6.

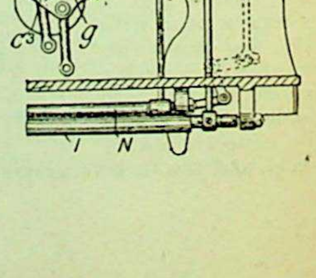


Needle-bars, vibrating laterally ; feed.—Relates to the form of hem-stitch known as spoke-stitching in which two lines of stitches are formed, one at each side of the row of hem-stitch openings. The needle carriers d^2, d^3, pivoted to the needle-bar, are geared together by a tooth d^1, and one of them d^3 is provided with an arm i^5 to which is pivoted a block i^4 sliding in a swinging frame surrounding the needle-bar. This frame is operated by a cam formed and driven so that the needles are separated during one descent of the needle-bar and apart during the two succeeding descents. The single forward feed takes place between these two latter descents.

Perforating - devices.—A thread-divider g^7 is arranged beneath the work-plate in line with the needles. It is reciprocated by mechanism, which is described, so that it enters the work before the descent of the needles. In addition, a pricker k^2 may be carried by the needle-bar in front of the divider g^7 in the line of feed. This pricker k^2 may be adjusted to or from the divider by turning it in its socket k^1.

17,095. Macdonald, J. K., [*Singer Manufacturing Co.*]. Aug. 23.

FIG. I. FIG. 5.



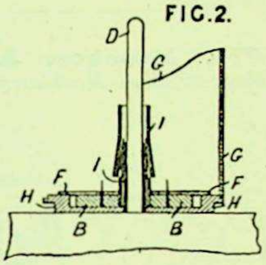
Hem-stitching &c. machines ; feed ; needle-bars, vibrating laterally.—The feed-bar is moved horizontally and vertically, in accordance with the kind of stitch required, through rock-shafts I, N operated respectively through an elbow lever H and a three-armed lever K from cam grooves on opposite faces of a single disc E geared to the main shaft. In the periphery of the disc E is a third cam groove, from which, through an elbow lever F, the swinging gate carrying the needle bar is operated.

Perforating-devices.—The usual crank pin c^1, Fig. 5, from which the needle bar is reciprocated, is provided with an offset c^2 carrying a pin c^3 which actuates the pricker bar through the medium of a lever *g*. The motion of the picker, being thus obtained indirectly, can be modified so that, for instance, the pricker enters the work before the needle, and leaves it after the needle.

17,602. Bowey, J., and **Rockliffe, G.** Aug. 31.

Sewing - machine spool and bobbin holders.—To prevent entanglement of the thread owing to loose coils of thread slipping over the end of the bobbin, the bobbin is wholly, or, as shown, partially, surrounded by a shield G, fixed to or formed in one with a disc H secured on the spindle D by means of a split tube I, and shaped so as to allow the rotation of the disc B and washer F on which the bobbin is carried.

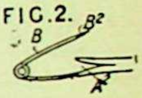
FIG.2.



17,665. Wardle, E. Sept. 1.

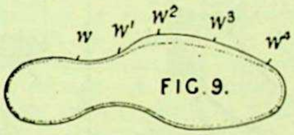
Bodkins.—The eye end of a bodkin is hollow, and is fitted with a spring hook B, which is closed by springing its free end B^2 through the opening A^2 into the hollow end of the bodkin. The end B^2 is sharpened, so that it can be passed through the tape &c. if desired.

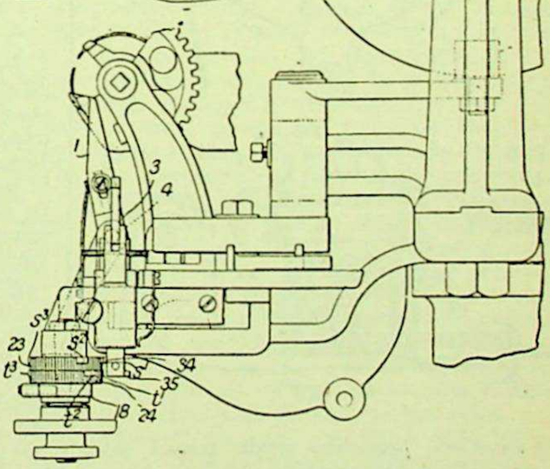
FIG.2.



18,076. Brookes, A. G., [*International Goodyear Shoe Machinery Co.*]. Sept. 7.

Boot sole-stitching machines; guiding materials.—Relates to gauges for machines in which the stitching is at different distances from the upper at different parts of the sole. The invention is shown as applied to a Goodyear sole-stitching machine. C is the stationary guide cut away, as shown at 8 in Fig. 1, to receive the movable guide 1 when retracted. This movable guide or gauge is adjustably secured to a lever 3 pivoted on a stud 4. The lever 3 is moved in one direction by a cam, as described below, and in the other by a spring 12. An adjustable screw 17 in the end of a lever 16 presses on the lever 3. The other end of the lever 16 is in contact with the cam 18, which is double-phased so that, during one revolution, it twice throws the gauge 1 away from the fixed gauge and allows it to return. The cam is rotated in one or other direction, according to whether a right or a left shoe is being dealt with, by one of a pair of pawls 34, 35 gearing with the ratchet-wheels 23, 24 respectively. The pawls are actuated by the feed-slide. These ratchet-wheels have each four stops s^1, s^2, s^3 &c., and t^1, t^2, t^3, &c., which, when opposite the pawls, prevent them engaging with their wheels. In sewing a right shoe for instance, the stitching is commenced at *w*, Fig. 9, and the seam continued to w^1 at a constant distance from the upper. At this point w^1, the operator by means of a lever 41 depresses the pawl 34, so that it engages the wheel 23 under the stop s^1 on which it previously reciprocated. When the wheel has rotated the stop clear, a spring lifts the pawl to the upper half of the wheel, so that it eventually is brought by the further rotation of the wheel over the second stop s^2, at which time the point w^2 of the seam is reached. From w^2 to w^3 the movable gauge remains in a fixed position. The operator then, by means of the lever 41, starts the cam again, and the gauge 1 is


FIC.9.


FIC.2

brought back to the fixed gauge to enable the remainder of the sole to be stitched.

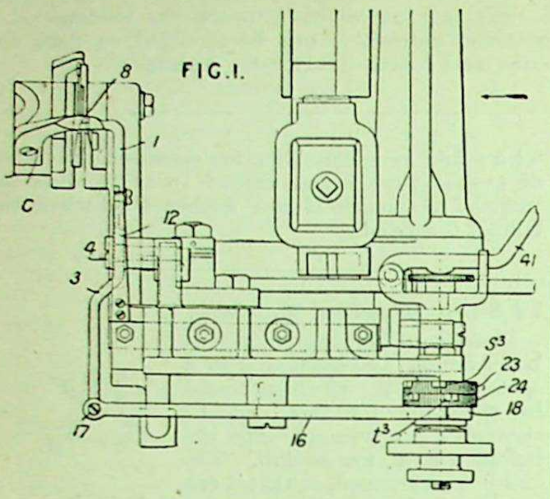


FIG. 1.

18,077. **Brookes, A. G.**, [*International Goodyear Shoe Machinery Co.*]. Sept. 7.

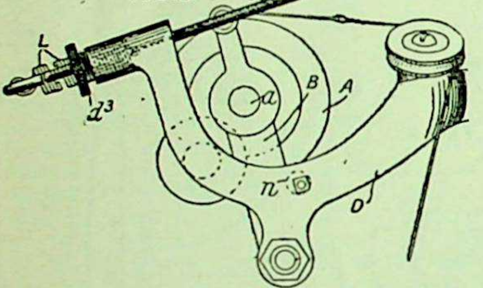


FIG. 2.

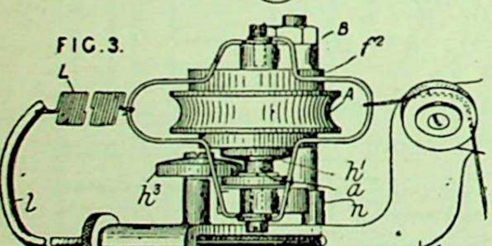


FIG. 3.

Sewing-machines, governing needle thread in.—Relates especially to the tension devices of wax-thread machines, such as those for stitching boot soles, and has for object to secure a uniform tension at all speeds. Figs. 2 and 3 show a side view and a plan. The thread truck A runs loose on a shaft *a* secured in a yoke B pivoted to a fixed bracket D. The truck A is formed with a tapered recess to engage a correspondingly-shaped disc f^2 fixed on the shaft *a*, and is normally locked by the action of a spring L, which pulls the yoke B to the left, thus causing the conical disc h^3 to engage the similar disc h^1 on the truck, and so force the truck into engagement with the fixed disc f^2. The thread is led from the truck towards the right, and in operation no thread is drawn until its tension is sufficient to draw the yoke B to the right against the spring L. Thread is then drawn freely until its tension decreasing allows the yoke B to return and again lock the truck. The spring L is adjusted by means of its screwed support *l* and a nut d^3, and the movement of the yoke B towards the right may be limited by an adjustable stop *n*.

18,078. **Brookes, A. G.**, [*International Goodyear Shoe Machinery Co.*]. Sept. 7.

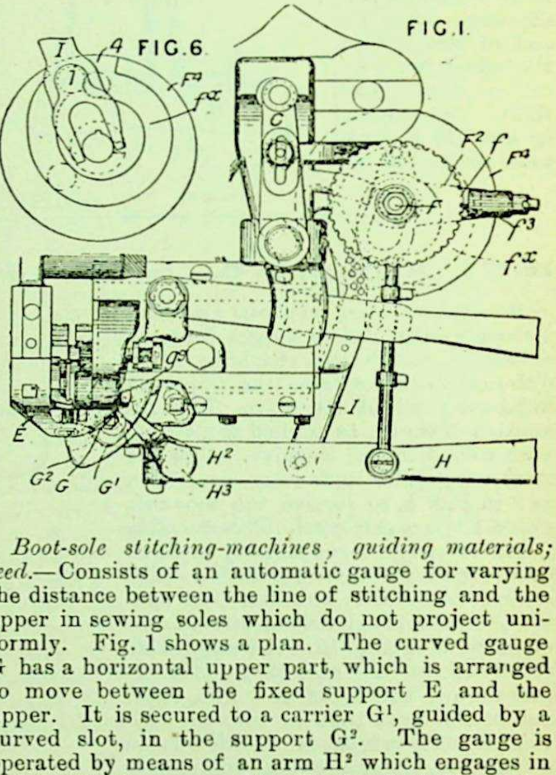


FIG. 6.
FIG. 1.

Boot-sole stitching-machines, guiding materials; feed.—Consists of an automatic gauge for varying the distance between the line of stitching and the upper in sewing soles which do not project uniformly. Fig. 1 shows a plan. The curved gauge G has a horizontal upper part, which is arranged to move between the fixed support E and the upper. It is secured to a carrier G^1, guided by a curved slot, in the support G^2. The gauge is operated by means of an arm H^2 which engages in a slot g^9 in the carrier G^1. To the shaft H^3 of the arm H^2 is adjustably screwed a lever H connected by a link I with the cam-groove f^x, Fig. 6, of a disc F^4 keyed on the lower end of a shaft F, the upper end of which carries ratchet mechanism F^2 &c. operated by the feed-lever C. Adjustments are provided for varying the position and direction of the path of motion of the gauge. The ratchet-wheel F^2 has square teeth, so that it can be turned in either direction by turning the pawl f^3, and the broad tooth *f* stops its rotation after one revolution. When the gauge becomes necessary, it is moved into operative position by hand, and this movement introduces the roller 1 on the link I through the gap 4 into the cam-groove f^x of the disc F^4, the rotation of which is at the same time started by reversing the pawl f^3. A right boot is sewn during the revolution of the disc F^4

in one direction ; a left boot is then sewn during the revolution of the disc in the opposite direction. Shoes of different sizes are sewn by merely altering the length of stitch, or by altering the throw of the gauge by shifting the bearing of the shaft H^3 to the right or left.

18,114. Lorrain, J. G., [*Climax Manufacturing Co.*]. Sept. 7.

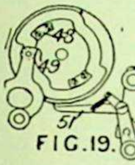


FIG. 19.

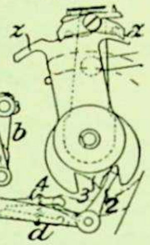


FIG. 9.

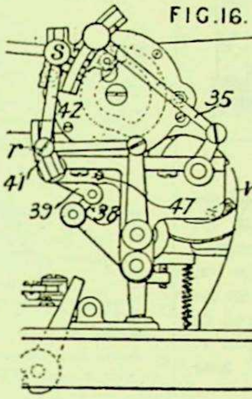


FIG. 16.

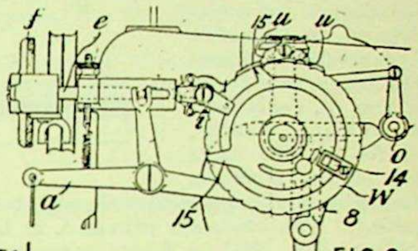


FIG. 2.

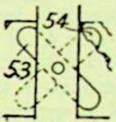


FIG. 27.

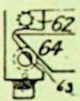


FIG. 29.

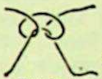
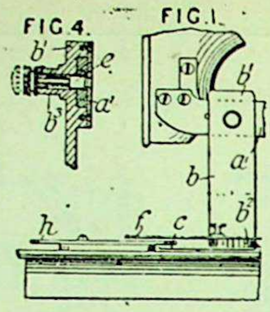


FIG. 15.

Sewing-machines, buttons, attaching in ; knotted-stitch machines ; needle-bars, vibrating laterally ; stopping-gear ; stopping, automatic.—Stitches are made between a pair of holes in the button by the lateral vibration of the needle-bar, the needle making a double reciprocation in each position to produce a knotted stitch, Fig. 15. The button clamp is then shifted to bring the other pair of holes under the needle, through a lever 8 operated by a cam carried by the ratchet-wheel *w*, which is actuated from the shaft *o* carrying the slotted arm through which the needle-bar is vibrated laterally. The ratchet-wheel *w* has two sets of teeth pointing in opposite directions, and engaged respectively by two pawls *u*, the wheel rotating in one direction during the sewing of one button and in the opposite direction during the sewing of the next. The changing of the pawls is effected by a cam arm *z*, Fig. 9, engaging pins on the pawls. When the lever *d* is depressed on the stopping of the machine, as explained below, the finger 2 carried by it is withdrawn from the recess 3 of the arm *z* in which it lies, and, by means of the spring centering-device 4, is directed towards the other recess 3, so that, on restarting the machine, the arm *z* is turned to its opposite position. The lever 8 is adjustably connected to the button clamp, so as to provide for buttons having different distances between the holes. The machine is started by depressing the lever *a*, thus moving the rod *e* carrying the belt shifter and brake *f* to the left, where it is retained by a spring trigger *i*. The machine is automatically stopped, after a predetermined number of stitches, by the engagement of one of the projections 15 with the trigger *i*. These projections are formed on plates marked with graduations read through a sight 14, so that the number of stitches can be varied. In a modification, Fig. 16, the ratchet-wheel *w* moves in one direction only, and the number of stitches is varied by altering the throw of the pawl. This adjustment is effected by altering the position of the link 35 in the slot forming part of the arm through which the needle is vibrated laterally. The movement of the button clamp is effected from the cam *w* through linkage including a slotted arm 41, the set-screws *r* and *s* being connected by a link 42 so that an alteration of the lateral vibration of the needle effects the corresponding alteration in the movement of the button clamp. By disconnecting the link 38 and securing the end 39 of the arm 41 to the hole 47, the button clamp is put in its central position for sewing buttons with two holes. The projections 15 are replaced by fixed pins on the ratchet-wheel *w*. To produce a quick movement of the button clamp, the steps of the cam are fitted with blocks 48, Fig. 19, having a sharp corner, and the follower arm is made with a corresponding corner 49. The cam roll, which is on a low dwell when the machine stops, is brought on to a high dwell as the machine is started by means of a pawl 51 connected to an arm *b* of the starting-lever. The button is held by three jaws, two of which are moved by a roller sliding in slots 53, 54, Fig. 27, in the jaw slides, and the third 62, Fig. 29, by a cam face 64 on one of the jaw slides cut at 45°, like the slots 53, 54. The jaws are thus self-centering. The mouths of the jaws are divergent or V-shaped. The button clamp is raised and the jaws opened by the movement of a lever, and automatically depressed, and the jaws closed, by a spring.

18,857. Macdonald, J. K., [*Singer Manufacturing Co.*]. Sept. 19.

FIG. 4. FIG. 1.



Sewing-machine folding-attachments. — An upper folding or plaiting blade h, attached to the work-plate, cooperates with the lower blade c, which is carried clear of the work-plate on an extension b^2 of a support b carried by an arm b^1 on an arm a^1, (only part of which is shown), secured to the main arm of the machine. The extension b^2 also carries the adjustable spacing-guide f. The blade c is provided, in line with its folding-edge, with a finger extending forwards nearly to the needle-hole. The eye b^1 slides on the arm a^1, so that the blade c and guide f can be moved to and from the blade h, and it is fixed in its working position by means of a spring pin e, Fig. 4, sliding in a boss b^3 of the eye b^1 and engaging in a hole in the arm a^1.

19,185. Lewis, G. Sept. 23.

FIG. 1.

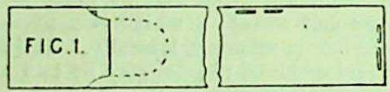
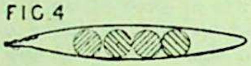


FIG. 4



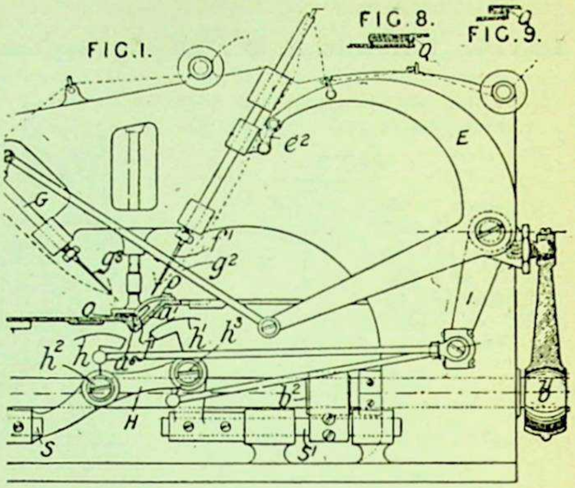
Needle cases. — Cases for knitting-needles and similar articles are made preferably from suitable paper adapted to prevent rust, by stitching the edges of blanks together to form tubes and then stitching the ends or bottoms as shown in Fig. 1. In stitching the joints, one of the edges is turned inwards, as shown in Fig. 4.

19,865. Wise, W. L., [*Brandon, D. H.*]. Oct. 3.

Knitted-fabric sewing-machines; blind-stitching machines; multiple-needle machines; folding attachments; work-supports; presser-feet.—The two layers of fabric are folded into the angular work-support a^1 by the rib j^1 on the presser-foot. The needle f^1 penetrates the two layers at the angle a^6, and the needle g^3 passes through the upper layer only, to form a blind-stitch, and also through the two layers at their edges. The seam, when opened out, is shown in Fig. 8, the blind-stitch being at Q. By dispensing with the needle f^1, a narrower seam is formed, Fig. 9.

Needle-driving; chain-stitching; double loop stitching.—The elbow lever E is operated from a spherical eccentric b^1, and connected by links e^2, g^2 to the needle-bars. The two loopers h, h^1, for either chain or double-loop stitching, are rocked from an arm I of the lever E on pivots h^2, h^3 carried on a frame H which is rocked on pins S, S^1 by an eccentric b^2.

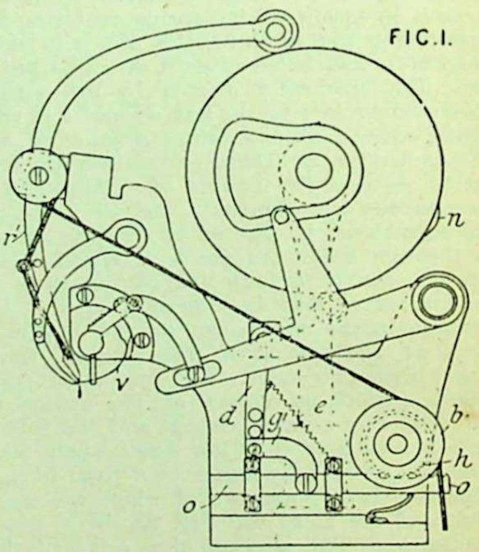
FIG. 1. FIG. 8. FIG. 9.



Needle shields; trimming or cutting.—The needle g^3 is prevented from penetrating the lower fabric at Q, and its depth of stitch there regulated, by a guide O carried on an arm o adjustably secured to the bed-plate. The needle g^3 is further guided by a rearward extension of the rib j^1. A trimming-knife may be carried by the needle-bar G.

20,178. Walther, H. Oct. 7.

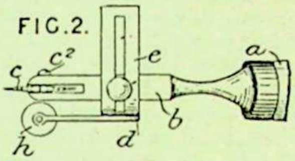
FIG. 1.



Boot-sole stitching-machines; governing needle thread.—In a welt-stitching machine the thread, before reaching the looper r^1, is wound round a sheave b pressed by a spring into frictional contact with a loose pinion h, the teeth of which normally run in a recess in the rack *o*. When the needle *v* has pierced the welt and is about to draw thread, the rack *o*, by means of a cam projection *n*, lever *d*, and link g^1, is moved so as to rotate the pinion *b* and put tension on the thread. The rack is returned by a spring *e*.

20,430. Parker, J. C. Oct. 11.

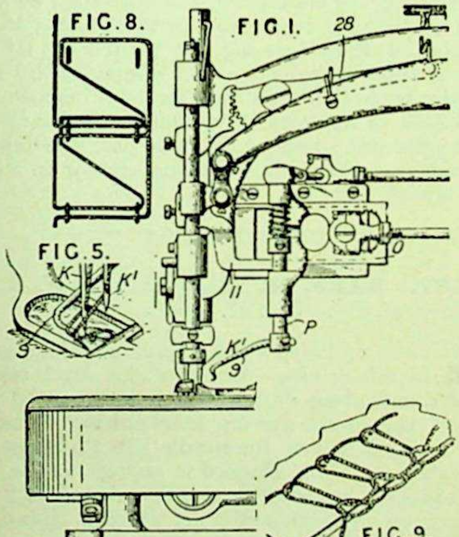
FIG. 2.



Marking out work for sewing.—Consists of an adjustable scoring-tool for use in the manufacture of harness, boots and shoes, and the like, for making marks such as those for indicating the holes for the stitches. The roller *h* for bearing against a guiding-edge is pivoted at right-angles to the scoring-wheel *c* in a slotted plate *d*, *e*, which is adjustable on the shank *b* by means of a winged nut. The scoring-wheel *c* is detachably pivoted in the shank by a screw c^2 having a plain middle part. The shank *b* is mounted at an angle in the handle *a*. The complete holes may be made by the tool, but are preferably made subsequently by an awl or the like.

20,571. North, W. S. Oct. 13.

FIG. 8. FIG. 1. FIG. 5. FIG. 9.

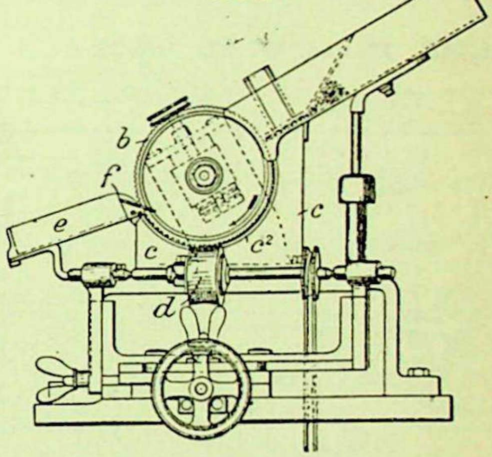


Overedge-stitching machines; multiple-needle machines; embroidery.—Consists of a device for producing an ornamental cross-stitch or overedge stitch, especially adapted for finishing the edges of knitted goods &c., and shown applied to a chain-stitch machine of the kind described in Specification No. 8516, A.D. 1886, in which two needles K, K^1, secured in one needle-bar, co-operate with a looper under the work-plate. As the needles leave the work, a thread finger 9, carried on a shaft P pivoted in a reciprocating slide O, draws the thread of the needle K^1 into a loop, Fig. 5, through which the needle K then descends, the finger being oscillated to the rear to release the loop, and then returned to its initial position. Figs. 9 and 8 show top and bottom views of the stitch produced. The slide O is reciprocated, and the shaft P oscillated, from elbow levers operated by eccentrics on the main shaft; and the upward motion of the presser-bar is imparted to the shaft P by means of a bar 11.

Governing needle thread.—To facilitate the formation of the loop by the finger 9, a thread-puller 28 is provided.

20,763. Milward & Sons, H., and Davis, S. Oct. 17.

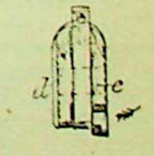
FIG. 2



Sewing-needles.—In an apparatus for grinding off the burrs left after stamping and piercing the eyes, the needles are fed on to a wheel *b*, transversely grooved to receive them. Between the wheel and a guide *c*, preferably coated with india-rubber or the like c^2, the needles are carried past a grinding-stone *d* pivoted in a different plane from the wheel *b*. They are fed on to the wheel *b* by a hopper, which may be vertical, or, as shown, inclined; and are removed by a tappet *f* into a hopper *e*. The wheel *b* may be grooved right across, or only on parts of larger diameter forming its sides; and these parts may be in one with the central part of the wheel, or separate therefrom.

20,896. Bradbury & Co. and Cooper, S. Oct. 19.

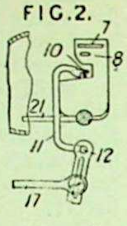
FIG. 2.



Lock-stitch shuttles. — Rotary oscillating shuttles are formed with a hollow boss *d* similar and opposite to the usual hollow hinged cap *c*, the shuttle being thus able to carry a reel of increased width.

21,051. **Kynaston, J.** Oct. 21.

FIG.2.



Sewing-machines, guiding materials in; cords, applying; presser-feet.—Consists of improved means for stitching looped supporting cords or tapes to curtains or curtain heading bands in the manner described in Specification No. 17,619, A.D. 1894, [*Abridgment Class* Furniture &c.]. The cord and band are guided respectively by an eye 8 and a slot 7 on the presser-foot, and the cord also passes through an eye 10 of a lever 11 which is periodically oscillated to withdraw the cord from the line of stitching and thus form it into loops. The lever 11 is pivoted at 12, and is adjustably oscillated through a slot, and a link 17 from a cam. The lever 11 is lifted at the same time as the presser-bar by a pin 21 projecting from the latter.

21,416. **House, W. M.** Oct. 26.

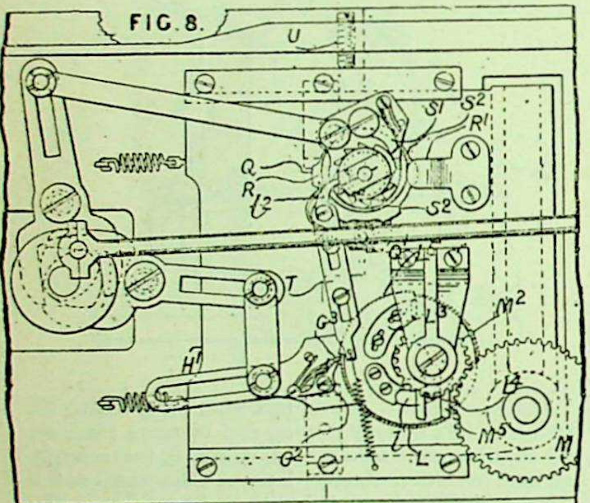


FIG.9.

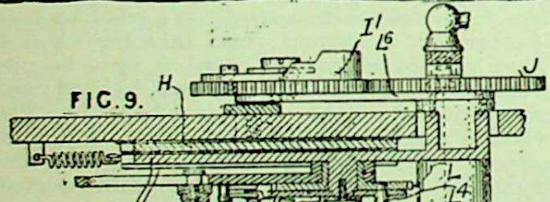


FIG.7.

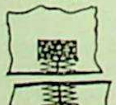
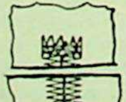


FIG.15.



Buttonhole-sewing machines; buttonholes, barring; needle-bars, vibrating laterally. — The stitching consists, as shown diagrammatically in Figs. 7 and 15, of side stitches formed by a longitudinal feed of the work-carrier and a lateral vibration of the needle-bar, and of barring-stitches at right-angles to the side stitches, overlapping them, and formed by a longitudinal vibration of the work-carrier, combined with a transverse feed of the same, first to one side of the buttonhole, then to the other, and finally back to the central position. Fig. 8 shows a bottom plan, and Fig. 9 a section. The longitudinal feed of the work-carrier is obtained through the feed-wheel J, pinions M, M^2, slot M^5, and pin L^4 from a ratchet-wheel L. On the same support as the ratchet-wheel L, and connected with it by the pin L^4 and slot l, is a ratchet segment L^5 of greater diameter. As the end of a row of side stitches is reached, the segment L^5 is moved by the pin L^4 under the pawl G^3, thus stopping the ratchet-wheel L, to be itself rotated directly by the pawls G^3, G^2. At the same time a projection L^3 on the segment L^5 engages the rod T carrying a pawl t^2 which thus moves the wide tooth s^2 of the ratchet-wheel s^2 clear of the pawl s^1, thus starting the rotation of the ratchet-wheel S^2. This wheel carries the barring-cams Q, R, which effect the longitudinal vibrations, and the transverse feed, by engagement respectively with the projections Q^1, R^1 fixed to the slides H, H^1. The vibrating needle-bar frame is actuated through a link from a two-armed cam lever, in a slot in which one end of the link is adjusted, either opposite the fulcrum of the lever during barring, or on one or other side of it during side stitching. The adjustments of the link are effected from a stepped cam I^1, Fig. 9, which is pivoted on a plate L^6 secured to the slide H^1 and gears with the feed-wheel J. Both the slides H^1, H are spring-controlled, and the range of movement of H^1 may be varied by means of a stop U, and that of H by forming the projection R^1 on a lever pivoted to the frame and connected by a pin and slot with the slide H. In a modification, the depression of the cam Q, in which the pin Q^1 rests during the side stitching, is made half the depth of the others, so that the stitching shown in Fig. 15 is produced.

21,487. **Lake, H. H.,** [*Whitcher, F. W.*, and *Peters, H. C.*]. Oct. 27.

Boot-sole stitching-machines; marking-attachments; needle-driving.—Consists of a stitch separating and indenting device which is actuated from part of the needle-driving mechanism. The link 121, through which the needle-bar 12 is operated from the crank 6, is adapted to engage, at the lower end of its stroke, with an arm 26 pivoted at 28 and carrying an adjustable stop 29, which is thus driven against the rod 19 carrying the indenting-tool 17, forcing it into the work against the spring 20. As there is normally a space between the opposing faces of the stop 29 and rod 19, the action is percussive. The tool 17 is secured to its holder by a screw 23, and by a rib 231 engaging in a corresponding slot in the holder. In order to actuate the tool 17 just as the needle begins to rise, the link 121 has a projection 144 adapted to engage a shoulder 145 on the arm 26.

(*For Figures see next page.*)

21,487.

FIG. 2.

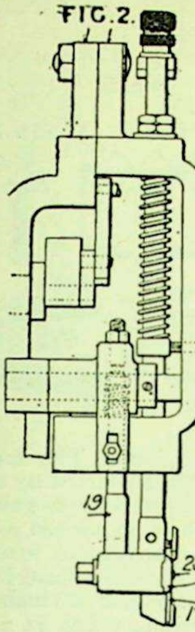
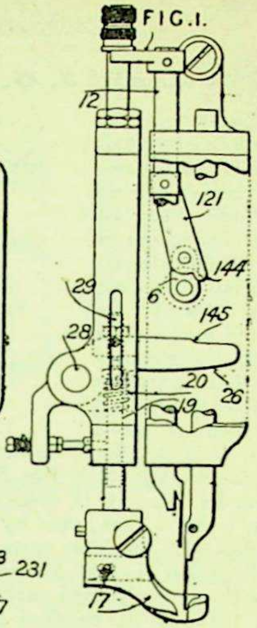
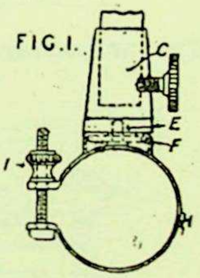


FIG. 1.



22,501. Powers, H. Nov. 11.

FIG. 1.



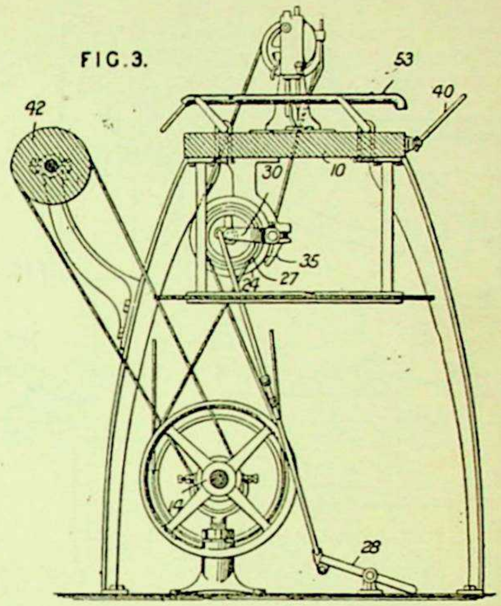
Sewing-machine illuminating apparatus.—A metal band H, clamped on the arm of the machine by means of screws I, is formed with a raised part to contain a washer F and the head of a rivet E uniting the band to a socket C, in which the lamp bracket is adjustably secured by a screw. According to the Provisional Specification, the bracket and band are united directly by a pin, rivet, or screw and nut, a space being left in the bracket to facilitate riveting or turning the nut.

23,080. Cameron, J. A. Nov. 20.

Grouped machines; driving; hem-stitching.—Consists of means for simultaneously sewing the opposite edges of a piece of fabric, and is especially designed for the manufacture of hem-stitched handkerchiefs. Two sewing-machines, of which one is shown, independently driven from the shaft 14, are mounted facing each other on a table 10 so that the length of fabric is fed between them. Each is driven through a clutch, which may consist of a pulley 27 forced into frictional contact with a pulley 24 on depressing the cam lever 30 provided with a brake lever 35 by means of a treadle 28.

Work-supports.—To provide for sewing fabrics of different widths, the central part of the fabric passes over a loop 40 and a bar 53, both of which can be raised or lowered according to the width of the fabric. Both the loop 40 and the bar 53 are held in position frictionally, so that they can be simply and quickly adjusted. The work is carried clear of the machine by a slowly-rotating roller 42.

FIG. 3.



23,788. Birch, A. Nov. 29.

FIG. 1.

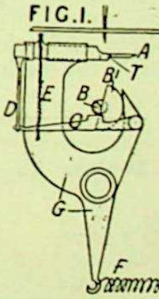


FIG. 3.

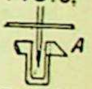
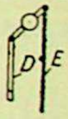


FIG. 2.



Chain-stitching machines.—The looper comprises a thin flat beak A, a shoulder T, and a cranked part connecting the beak with the pin by which the looper is pivoted so that the pin and beak are in line. In operation, the beak A passes between the needle and thread parallel to the needle, until the shoulder T engages the thread. The looper then turns so as to spread the loop. One method of effecting these movements is shown. The looper is oscillated on its axis by the cam B, lever C, link D, and spring E, and the carrier G by which the looper is moved longitudinally is oscillated by the cam B^1 and spring F.

23,984. Furnival, A. Dec. 1.

Blind-stitching machines; carpet-sewing machines; leather-sewing machines; seaming edge to edge;

work-supports; feed.—Consists of a machine for sewing together edge to edge the edges of carpets, leather coverings for rollers, &c. The machine is traversed along a slide such as B by means of a nut *d* engaging a fixed screw and turned by a pawl E and appropriate gearing operated from some part of the machine such as the take-up lever H. The work clamp, extending the length of the slide, comprises a lower plate *m* having an upturned lip, and an upper plate m^2 having a down-turned lip, and if necessary a third plate m^4.

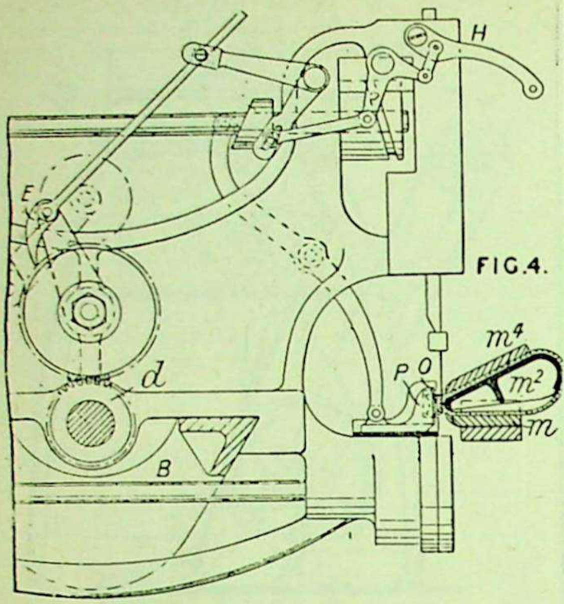


FIG. 4.

Presser-wheels.—The edges of the work are bent together by two rollers O, one on each side of the needle.

Needle shields.—A block P reciprocating between the rollers holds the needle up to the work.

24,125. **Duke, F. W.,** and **Duke, M.** Dec. 4.

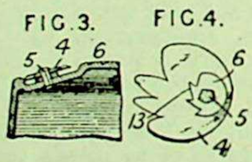


FIG. 3. FIG. 4.

Thimbles.—A thread-cutting device is attached, consisting of a notched disc 4 separated by a washer 6 from the bottom of a recess in the thimble. The thread is preferably braced against the sides of the notches in the disc and cut by the sharp teeth 13 of the washer, Fig. 4. The rivet-hole 5 through the disc and washer is situated away from the centre of the disc and washer, and it is pentagonal so that, when filled by the round rivet, any turning is prevented. The notches in the disc 4 may be of various forms, *e.g.* radial, tangential, or in a direction between the two. The separation of the cutter from the thimble by means of a washer is also shown applied to various forms of cutters attached to the side of the thimble.

24,252. **Lewis, J. G.** Dec. 5.

Blind - stitching machines; hem-stitching machines.—Consists of an improved hem or seam in which a portion of the material folded upon itself is secured to the main part of the material by blind - stitches made lengthways of the hem or seam. Figs. 1, 2, 3, and 4 show a hem. The material is folded as shown in Fig. 2, the edge being turned under at 12. It is then bent over a guide 13, Figs. 3 and 4, and sewn by two connected rows of stitches, one of these rows entering the main part of the material as at A, and the other entering one or both of the folded parts but not the main part. Fig. 1 shows the finished stitch, which is a lock-stitch having the threads crossing outside the material on the line of the hem.

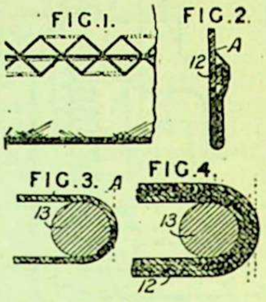


FIG. 1. FIG. 2. FIG. 3. FIG. 4.

24,272. **Wheatley, R.** Dec. 6.

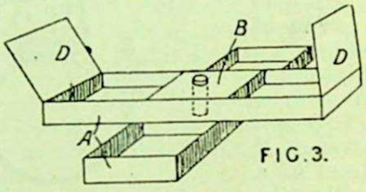


FIG. 3.

Needle, pin, and like boxes and cases.—Boxes or trays A for needles, pins, haberdashery, &c. are pivoted together, as shown in Fig. 3, the centres of the boxes being fitted with blocks B to receive the pivots. The upper box or boxes serve as lids for the lower boxes, and, when turned at right-angles to the lower boxes, as shown in Fig. 3, the contents of the latter are displayed. The upper box is fitted with lids D.

24,347. **Brock, W. E.,** and **Cranage, H. B.** Dec. 7.

Buttons, attaching.—Relates to apparatus for attaching shoe buttons, which is specially applicable to ankle-strap shoes. The buttons are fed from a detachable chute A^1, formed with a spring L which secures the buttons when the chute is removed, to a chute A which is preferably attached to the presser-bar G of a suitable zig-zag sewing-machine. A spring D holds the lowest button in place, and a foot K on the chute A holds the strap &c. in position. After securing the button by

FIG. 1.

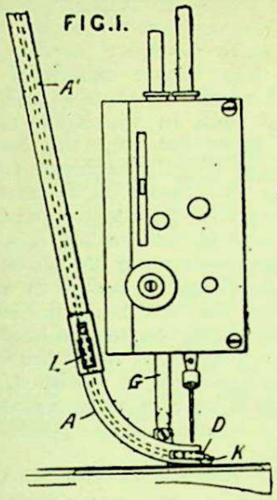
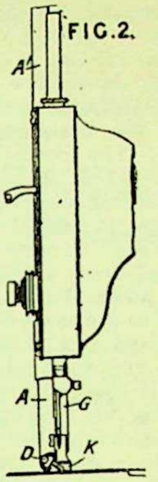


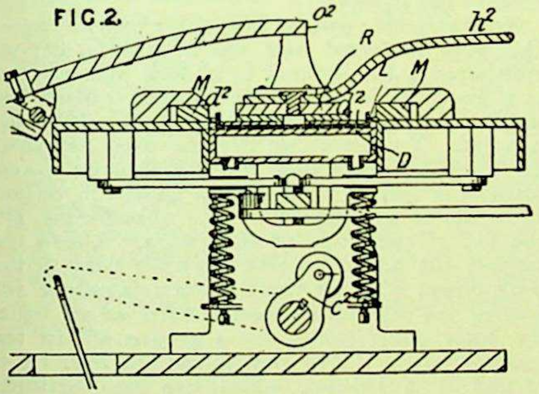
FIG. 2.



stitching, the machine is stopped and the button drawn out with the shoe.

24,390. Lake, H. H., [*Pine, J. K. P.*]. Dec. 7.

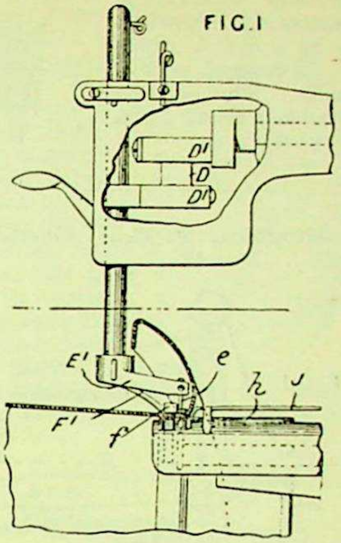
FIG. 2.



Folding-instruments.—Relates to presses for folding the edges of cuff and collar blanks preparatory to stitching them. The machine, shown in transverse section in Fig. 2, comprises a vertically-movable pressing-plate D, radially-movable folders M, and a templet carried on a counterpoised arm O². The templet proper consists of plates d^2 which are capable of simultaneous radial movement from an arm h^2, crank disc R, and links not shown. Thus, after the edges of the fabric have been folded over the edges of the templet by the folders M, the plates d^2 are retracted and the templet lifted out of the way, so that, on then raising the press-plate D by means of a treadle and cam arms C², the fold is sharply made and does not need to be disturbed in order to remove the blank.

24,754. O'Donnell, E. G. Dec. 12.

FIG. 1

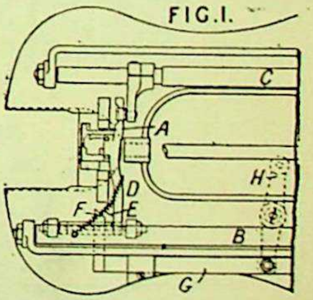


Hat-sewing machines; needle-holders; presser-feet.—In order that the short needle *e* and presser-foot *f* may operate within the hat brim to sew in the sweat band, they are carried out of the line of the needle and presser-bars on arms E¹, F¹, of the shape shown, attached to these bars.

Guiding materials; needle-driving.—The sweat band *h* is guided by a guide J. The needle-bar is reciprocated through a link D having elongated bearings D¹.

25,004. Brock, W. E., and **Cranage, H. B.** Dec. 16.

FIG. I.

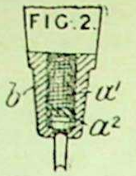


Leather-sewing machines; feed; binding edges.—To facilitate sewing round curves in binding leather &c. in the manufacture of boots and shoes, an oblique feed is provided. Fig. 1 shows an underside plan with the shuttle &c. removed. The ordinary V-shaped binding-feeder is used, operated by the usual rock-shafts B, C, spring D, and lever A, for a straight feed. To produce the oblique feed, a projection E on the lever A is engaged by the inclined surface F moved into its path by the hand or foot operated lever H and rock-shaft G.

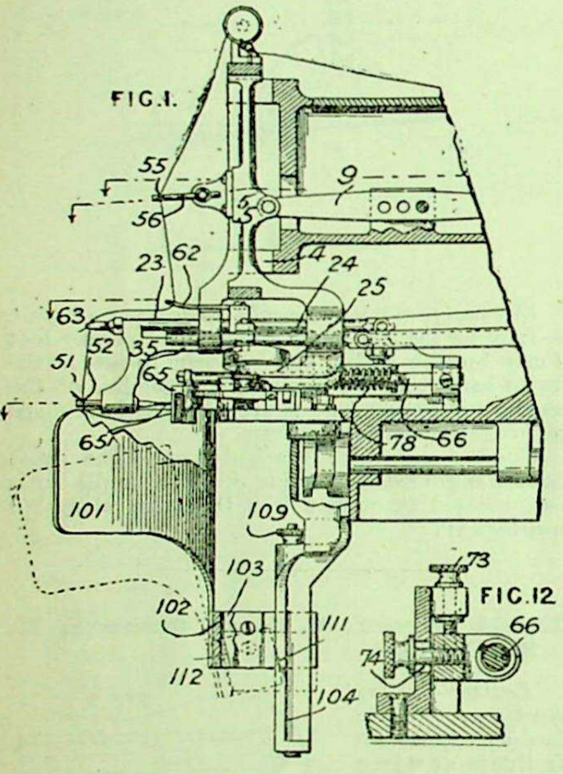
Presser-feet.—The Provisional Specification states that the presser-foot may be formed with a small projection close to the needle way and bearing against a shoulder on the feeder.

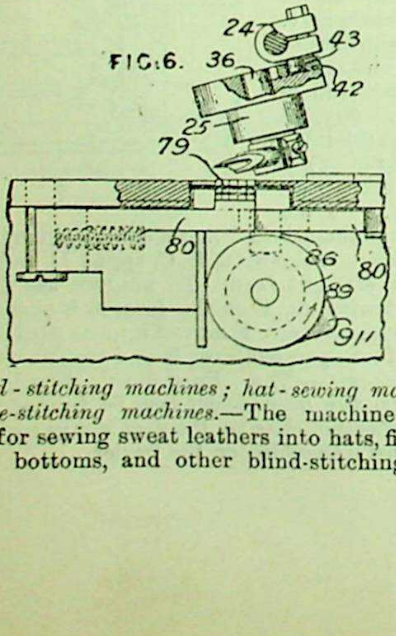
25,064. Conway, G. Dec. 18.

Awls for sewing.—The blades of saddlers' and shoemakers' awls are detachably secured to the handle by a cup b, which screws on to a reduced part a^1 of the handle. The squared end a^2 of the blade shank fits a recess in the part a^1.



25,070. Newton, P. A., [*Majestic Sewing Machine Co.*]. Dec. 18.





Blind-stitching machines; hat-sewing machines; overedge-stitching machines.—The machine is designed for sewing sweat leathers into hats, finishing trouser bottoms, and other blind-stitching work, and may with slight changes be used for overseaming. Fig. 1 shows the front end partially in longitudinal section. The work is folded over a guide, and the needle passes horizontally through the edge of the fold, co-acting with a looper.

Chain-stitching; needle-holders; needle-bars, vibrating laterally.—The looper oscillates in a plane slightly inclined to the horizontal and containing the horizontal path in which the needle moves. The needle is so set that the loop is thrown out in a plane slightly inclined to the vertical. Fig. 6 shows the looper on a plane perpendicular to that of Fig. 1. The looper shaft 36 is supported in a part 25 of the bracket 5, and is oscillated from a reciprocating bar 24 through a pin 43 and a block 42 sliding in a slot in a disc secured to the shaft 36. The bar 24, and also the bar 23 and arm 35 by which the needle-holder is guided, reciprocate in extensions of a bracket 5 which is vertically reciprocated in guides 4 by a cam lever 9. The extent of the reciprocation of the bracket 5 is altered by altering the position of the fulcrum of the lever 9.

Needles, setting.—The position of the needle in its holder is determined by an adjustable stop 51.

Governing needle thread.—The thread passes from the tension to the needle through eyes 55, 62, 63, 52. The eye 62 is in a spring plate secured to the needle-holder, and by its motion the take-up is effected. The eye 55 is formed in a bar 56, which slides through a rotary stud and can be adjusted so as to have the eye 55 nearer to, or further from, the eye 62, and thus set the stitch more, or less tightly.

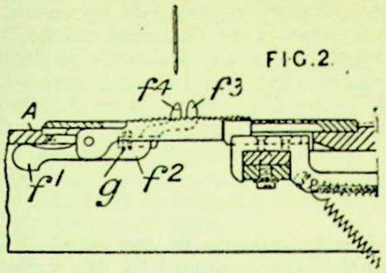
Work-supports; guiding materials; presser-feet.—The work is folded over the edge of a curved work-support 101 secured to a block 102 pivoted to a block 103 which slides between guides 104 and is held up by a spring against an adjustable stop 109. To remove or put the work in place, the support is depressed, and when in its lowest position is turned outwards, as shown in dotted lines, and is so retained by the chamfering 112 and 111 of the block 103 and guides. Above the support 101 are adjustable arms for holding the work down. One of them contains a groove for guiding the reed into place next the sweat band, the latter being guided by a groove 65^1 in the presser-foot 65. The presser-bar 66, Fig. 12, is carried in a bracket, which can be vertically adjusted by the screw 73 and then locked by the large-headed screw 74. The presser is withdrawn from the work against a spring 78 by a cam-lever pivoted to the presser-bar and engaging a fixed abutment.

Feed.—The plate 80, Fig. 6, carrying the feed-dog 79, moves parallel with the bed-plate. The cam 91^1 moves it in the line of feed, and the groove cam 89, in which the pin 86 engages, moves it to and from the work.

25,246. Macdonald, J. K., [*Singer Manufacturing Co.*]. Dec. 20.

Hem-stitching machines; perforating-devices.—The thread-dividing spurs f^3, f^4 are carried on a lever f^1, f^2 pivoted to the feed-dog. The end f^1 is pressed against a fixed surface, such as the bed-plate A, by a spring g. Thus the spurs f^3, f^4 rise and fall with the feed-dog, but with a greater amplitude of motion, and having entered the work when the feed-dog rises remain in it as long as the feed-dog is feeding the work. The spurs are preferably adjustable on the lever f^1, f^2.

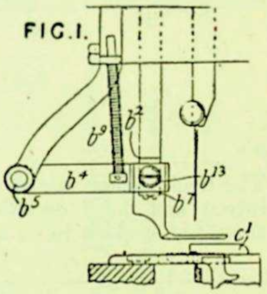
FIG.2.



25,405. **Welch, C.**, and **Welch, C.** Dec. 22.

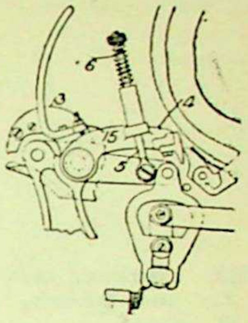
Multiple-needle machines; seaming edge to edge; guiding materials; presser-feet.—The machine is for sewing together two pieces of fabric with their connected edges a given distance apart. Two pressers are provided, each pivoted at b^{13} to a separate lever b^4 pivoted at b^5 and pressed down by an adjustable spring b^9. The levers b^4 are raised by a plate b^7 on the presser-bar, and their upward movement is limited by shoulders b^2. A rib c^1 on the needle plate keeps the edges of the work at the right distance apart. A continuation of this rib may be formed on the feed-dog. Two needles are used, thread being carried between them by the shuttle.

FIG.1.



25,468. **Rush, J. T.** Dec. 23.

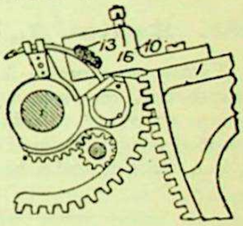
Boot-sole stitching-machines; presser-feet.—Relates more especially to machines of the kind described in Specification No. 7793, A.D. 1892. The lever 4, actuated by a pawl and ratchet, is connected by a link 5 and spring 6 with the presser-foot lever 3. Thus, as the lever 4 rises, it imparts a yielding movement to the presser-foot, but on its further movement engages a stop 15 on the lever 3, and gives the presser-foot a final unyielding movement.



25,469. **Rush, J. T.** Dec. 23.

Boot-sole stitching-machines; wax-thread machines; lubricating machines.—To prevent the needle from jamming in the work or needle guide owing to excess of wax, it is supplied with lubricant before each stroke. This is effected by a box 10 secured to the lever 1 and containing felt or the like and a lubricant. The needle on rising rubs against a portion 13 of the felt which projects through a slot in the box 10. Oil &c. is supplied through openings in the hollow stem 16 and the cap which covers it. The invention is shown applied to a machine of the kind described in Specification No. 7793, A.D. 1892, but is generally applicable.

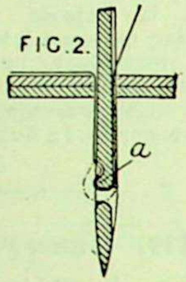
FIG.1.



A.D. 1900.

373. Queck, G. J., and Queck, P. Jan. 6.

FIG. 2.

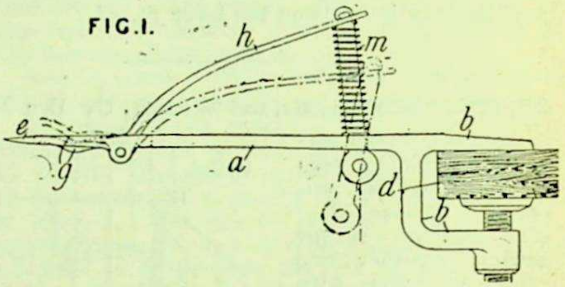


Sewing-machine needles are provided with a bridge *a*, instead of the usual thread groove, for the purpose of obtaining a larger loop.

381. Hewins, J., and Hardy, C. Jan. 6.

Tufting-machines.—A tool for making mats, hearthrugs, &c., by securing scraps of cloth to a canvas or other suitable foundation, consists of a pointed part *a*, formed with a jaw *b* for clamping it to a table *d*, and a hooked lever *h*, operated by a spring *m* and a stirrup or the like. The hooked end *g* of the lever is caused by the spring to enter a slot in the part *a*, to allow the foundation to be pushed the required distance over the point *e*

FIG. 1.



The hook is then raised, a piece of cloth is inserted into it, and the foundation is withdrawn, causing the piece of cloth to be attached to it.

562. Wise, W. L., [*Aktiengesellschaft vorm. F. Martini & Co.*]. Jan. 9.

FIG. 6.

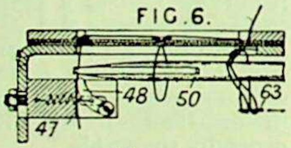


FIG. 15.

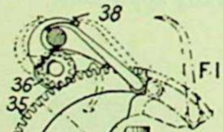


FIG. 16.

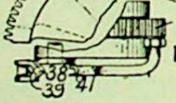
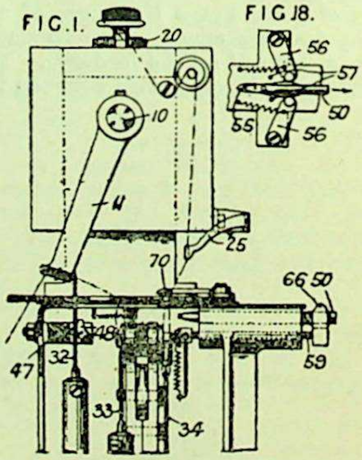


FIG. 1. FIG. 18.



Book-stitching machines; knotted stitch machines; multiple needle machines. — Fig. 1 shows a general view. The machine comprises three hooked needles 32, 33, 34, a gripper 50 which penetrates the loops formed by the needles, a device for doubling one of the loops to form eventually a weaver's knot, a tension device 20, and fixed and movable thread guiding-arms 25, 11. Figs. 15 and 16 show part of the loop-doubling device. It comprises a hook 38 carried on a pinion 36 geared to an oscillating toothed segment 35 which carries an arm forked at 41. On each side of the hook 38 are depressions in which the thread can lie, and behind it is a hole 39 in which the needle 34 dwells while its loop is being cast off. The jaws at the forward end of the gripper, Fig. 18, are normally closed by a spring, but can be opened during the motion of the gripper to the left by the engagement of the tails of the jaws with levers 56, which have abutments 57, and which allow the jaws to remain closed when the gripper returns. In operation, the needles 34, 33, 32 successively penetrate the work and engage the thread pulled off on a previous operation and now stretched between the arms 25 and 11. The needle 33 makes a quarter turn to open its loop, and the needle 32 pulls the end of the thread through the holder 47, 48. The gripper now advances, at the same time, by means of the spring clips 66, advancing the bar 59, on the forward end of which is the loop support 63, Fig. 6, round which the loop is first doubled by the hook 38 and then expanded, as shown in Fig. 6, by the fork 41 for the passage of the gripper. The gripper penetrates the two loops and seizes the thread end, which it draws back through the loops, at the same time withdrawing the support 63 from the doubled loop, and the knot is then drawn tight.

Governing needle thread ; thread-cutters.—At the completion of the above operations, the thread is cut, and the tension is relaxed by an end movement of the shaft 16, so that the arm 11, on swinging back to the position shown, draws off the necessary length of thread for the next operation. A pin 70 prevents the thread from escaping from the cutters.

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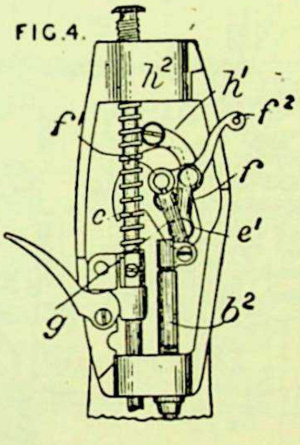
585. Macdonald, J. K., [*Singer Manufacturing Co.*]. Jan. 10.

FIG. 4.



Sewing - machine needle - driving ; needle - holders ; governing needle thread ; leather-sewing machines.—The object is to make the needle - bar descend quickly, and rise slowly enough for the shuttle to draw sufficient thread before the needle eye comes above the throat - plate, and the improvements are specially applicable to leather-sewing machines. To the usual crank-pin e^1 is pivoted the longer arm f of an elbow lever, which is fulcrumed on the end of a swinging link h^1 pivoted at h^2 to the frame, and the shorter arm f^1 of which is connected to a collar on the top of the needle-bar by a link g. The parts are so proportioned that, with the needle in its lowest position as shown, the link g and the pin h^2 are about in line ; and that, during the slow part of the needle-bar's ascent, the free end of the link h^1 is brought nearly in line with the axis of the crank shaft C. The needle-bar is guided in a single long sleeve b^2, which can be replaced when worn. The elbow lever has attached to it a take-up arm f^2, operating as described in Specification No. 18,917, A.D. 1891.

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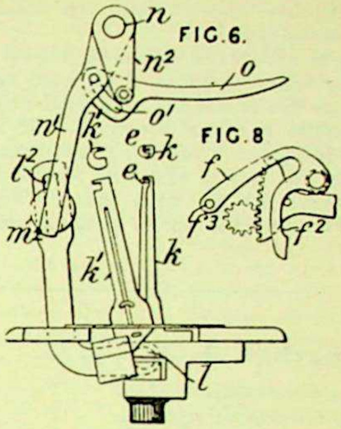
694. Brickley, W. H. Jan. 11.

Glove - sewing machines ; double - loop stitching-machines ; governing under thread. — Relates to double chain-stitch Piqué machines. The under thread is pulled off the bobbin as required by a lever f, having a cam surface f^2 engaged by a pin on the lever which operates the under needle. The course of the thread from the bobbin is through a fixed eye, the eye f^3, a tension device, an eye in a spring arm, and finally through two fixed eyes. In a modification, suitable for light work, the lever f is replaced by a horizontally-pivoted lever, the eye end of which is normally depressed by its own weight, and the arrangement of the other eyes &c. is somewhat modified.



Feed ; work-supports.—The finger is made in two parts, a fixed part k in which the lower needle e oscillates, and a part k^1 which oscillates in unison with the presser-foot, the work being gripped between the two parts. The part k^1 is carried on the same arm as an arm l carrying a slotted disc m^2 adjustable in the slot l^2 and engaged by an arm n^1 loose on the shaft n. The shaft n has fixed to it an arm n^2 to which is pivoted a lever o having a slot o^1 engaging a pin on the arm n. In the position shown, the part k^1 is drawn to one side to allow of access to the needle e. On depressing the lever o, the arms n^1, n^2 are locked together, and the part k^1 thus oscillated from the shaft n, which is adjustably oscillated from cams through a slotted lever &c.

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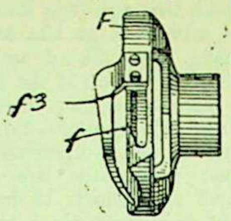
795. Macdonald, J. K., [*Singer Manufacturing Co.*]. Jan. 13.

Lock-stitch hook sewing-machines.—The hook is of the oscillating type, though it may also be continuously rotating, and receives through a usual mechanism one complete oscillation, or revolution, as the case may be, for each complete vibration of the needle-bar, and the two halves of an oscillation or revolution occupy equal times. Within the hook F, which is a complete ring, is supported the segmental thread-case G. Its arc of contact with the hook is less than 180°, and it is situated on that side of the axis of the hook to which the needle loop is carried by the hook, so that the cast-off position of the hook is quickly reached. The fixed piece H retains the case in contact with the hook, and affords between itself and the case a space *i* in which the loop is guided during the take up. The beak *f* of the hook is turned so that in its cast-off position it points somewhat in the direction in which the thread is pulled.

Governing needle thread and under thread; needle shields.—The take-up, which is effected by a lever operated from the needle-bar in a usual way, occurs when the needle is out of the work and before a fresh stitch is begun. The hook f^3 keeps the underthread out of the way of the hook *f*, and also pulls off underthread for the next stitch. The upper horn of the holder H serves as a needle guide.

FIG.4.



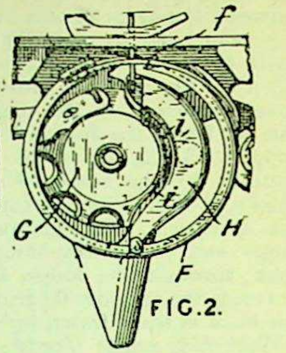


FIG.2.

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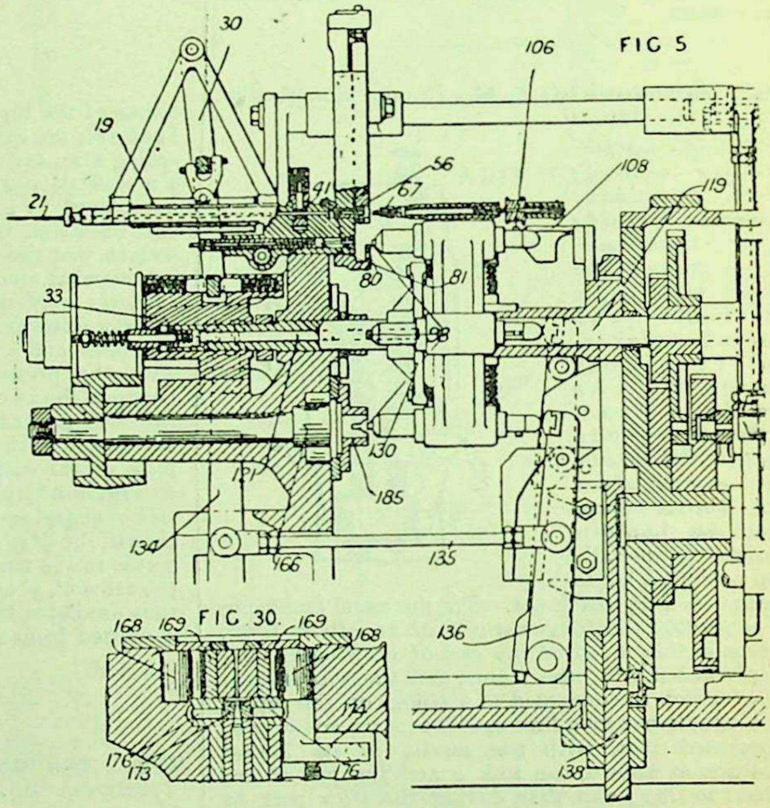
835. Langelier, A. J. Jan. 13.

Sewing-machine needles.—Consists of an automatic machine for making blanks for sewing-machine needles or similar articles. Fig. 5 shows a general section. The wire 21 is fed by a reciprocating clamp 19 through a yielding clamp 41 into a cutter 56 which carries down the blank cut off, in front of a forcer 81 which pushes the blanks into one of a number of holders 98, —in this case four. The blank during this movement rests on a guide 80. The holders 98 are carried on an intermittently-rotated shaft 119, and present the blanks to three swaging-heads in succession, whereof only the lowest 166 is shown, the blank being kept in correct position by the engagement of the holders 98 with guides 185 in front of the swaging-heads. Each holder is closed by a cam-operated wedge moved forward by cam levers 136, and backward by spring pins carried on a head 130 secured to a spindle 121 sliding in the shaft 119 and yieldingly connected to the reciprocating head 33. Within the hollow spindle of each holder 98 is a second spindle having a projection 106 which, every revolution, engages with a stationary cam 108 to force out the finished blank. The levers 136 are actuated by cams on a vertically-reciprocating bar 138, and one of them is connected by a link 135 to the lever 134, which operates the crosshead 33. The latter is yieldingly connected to the lever 30, which operates the sliding feed clamp 19. Fig. 30 shows the final swaging-head, 169 being the beaters, which as they rotate are actuated by contact with the rollers 168. The finished blank is cut off to the right length by a cutter 173 actuated by the contact of one of the bars 176 with the cam surface of a lever 174. The raw end of the wire is trimmed to a conical shape, before a blank is cut from it, by a special milling-tool 67.

FIG 5



F I G. 30.

943. Macdonald, J. K., [*Singer Manufacturing Co.*]. Jan. 16.

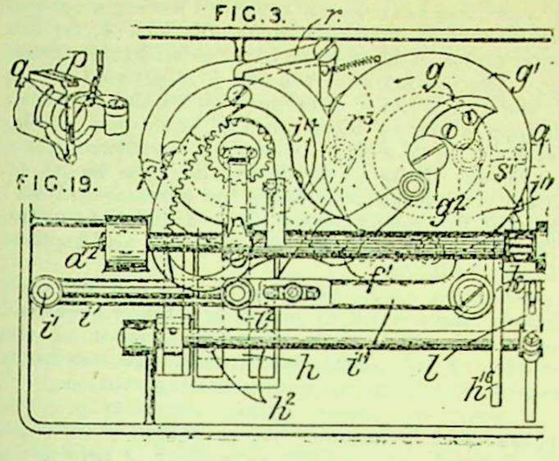


FIG. 3.

FIG. 19.

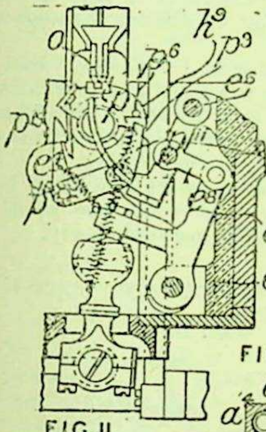


FIG. 11.

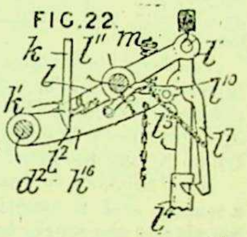


FIG. 22.

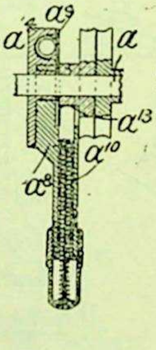


FIG. 21.

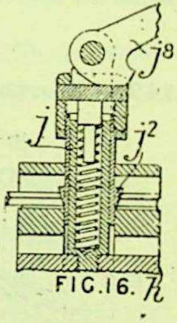


FIG. 16.

Buttonhole-sewing machines; buttonholes, cutting; double-loop-stitching machines.—The sewing-mechanism comprises an upper needle eccentric to the needle-bar, and a lower needle e^4 and looper, carried in a turret e, Fig. 11. The upper needle penetrates the work near the edge of the slit, and the lower needle passes through the slit. The shaft e^6 of the lower needle-carrier is inclined, and so arranged that the paths of the two needles intersect in the plane of the work. The lower needle is operated by a toggle e^8, e^9 so as to dip to form a loop. The looper (not shown) is carried in the end of a link pivoted to the turret, and is oscillated from the carrier e^5. The upper needle-bar and the turret are rotated simultaneously to sew round the eye of the buttonhole by toothed segments meshing with pinions carried on the needle-bar and turret. Fig. 3, which is an underside plan, shows the lower segment f^3. The shaft f^1 carrying the segments is oscillated by a cam g on the cam-wheel g^1. After the rotation of the turret and needle-bar through 180°, they are retained in position during the sewing of the second side of the buttonhole by a catch r, which is released at the end of the sewing by a cam r^3. The cam shaft g^2 is rotated step by step by a friction clutch device, operated from the shaft d^2, which is oscillated from the main shaft a during the sewing, and from which the lower needle and looper are operated. The work clamp comprises two jaws, pivoted vertically at h^2, Fig. 3, to a block h, which is moved to give the feed by the cam-wheel g^1, and bell crank i^{11}, i^{11} connected by a pin and slot to a lever i pivoted at i^1 and connected at i^2 to the block h by an adjustable cone bearing. The lateral movement of the clamp is effected by the cam arm i^{14} secured to the block h. After the slit is cut, the jaws are spread by the device shown in Fig. 16. Secured to the block h is a post j, at the top of which is pivoted a cam lever j^8, by depressing which the cone j^2 sliding on the post j is forced between the jaws. The work clamp is opened by the upward movement of a rod h^9, which at the same time, by means of a projection p^9, engages a pin p^6 on the anvil and throat plate carrier, Figs. 11 and 19, to cut the thread, as described below, and move the anvil p into the position, to co-operate with the cutter O. The raising of the rod h^9 is caused by the depression of the foot-actuated lever h^{16}, which, with its connections, is shown detached in Fig. 22. The work is then moved into position for a fresh buttonhole, and on the lever h^{16} being then released the slit is cut, the clamp spread, and the sewing started, as follows:—A sleeve l^4, reciprocated from a constantly-running shaft under the bed-plate, can be connected with the shaft m, for one reciprocation, through the arm l^1, link l^3, and catch l^7 under the control of dogs l^{11}, l^{10} actuated by the lever h^{16} as it rises on being released. The shaft m is connected by a toggle with the slit cutter, which, as the arm l^1 is depressed, is thus caused to cut the slit, a second arm l on the shaft m being at the same time engaged with the hook k^1 of the rod k. As the shaft m returns to its normal position, the rod k is pulled down, and the cutter is raised, releasing, by means of the hooks p^{16}, p^{19} the pawl p^{11} which held the anvil in place. The depression of the rod k operates an elbow lever, which starts the sewing as described below and operates the lever j^8 to spread the clamps. On the completion of the sewing, a projection s^1 on the cam-wheel g^1, Fig. 3, disconnects the rod k and arm l, thus allowing the rod k to rise and stop the sewing, and permit the clamps to approach each other.

Thread-cutters.—The loop left on the looper is cut before the work is shifted by a cutter q, Fig. 19, actuated by a pin-and-slot connection from the anvil carrier which is oscillated as described above.

Stopping, automatic; stopping-gear.—Fig. 21 shows the stopping and starting device. The disc a^4 carrying the belt fork slides on the main shaft a, and is connected to a parallel sliding shaft operated by the rod k as described above. The locking-bolt holder a^8 is carried by the disc a^4, and the contact between the bolt a^{10} and slot a^{13} in the fast pulley is cushioned by a spring a^9.

1189. Bowden, W. Jan. 19.

FIG.2.

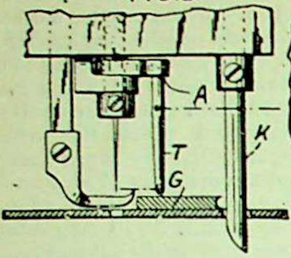
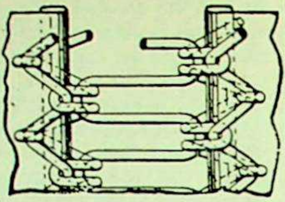


FIG.5.



Hem-stitching machines ; overedge stitching ; seaming edge to edge ; trimming or cutting ; guiding materials ; folding-attachments. — Relates to the production of imitation hem-stitching by connecting together two fabric edges. The edges are connected by a lacing-thread, and are at the same time whipped instead of being hemmed in the ordinary way, Fig. 5. The needle-bar, which carries two needles and vibrates laterally, carries also an arm A which is caused to oscillate by the engagement of a pinion with a fixed rack. From the arm A depends a finger T through which the lacing-thread is passed. Thus, in the operation of the machine, each needle descends alternately through one of the fabric edges and through a loop of lacing-thread outside that edge. Two separate pieces of fabric may be united, or, as in the device shown, a single piece is divided by a knife K and its edges separated and folded by the triangular-shaped guide G. By throwing the arm A out of action periodically, the lacing is omitted at intervals.

1447. Boult, A. J., [*United Shoe Machinery Co.*]. Jan. 23.

FIG.2.

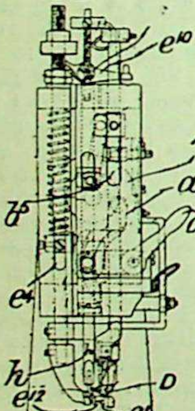


FIG.4.

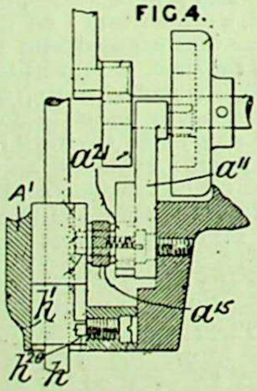
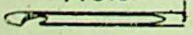


FIG.6.



Boot-sole stitching-machines ; marking-attachments ; feed.—Relates more particularly to machines in which one thread only is used, loops of it being forced into the work, and the object is to effect the adjustment of the stitch-indenting tool at the same time as the length of stitch is altered. The work is fed by a combined awl and needle carried in a bar b^5, which, together with the presser-bar e^4 and bar h carrying the indenting-tool, slide in a frame A^1 oscillated from a cam lever a^{11} having a curved slot in which engages a block a^{21}, Fig. 4, on the inner end of a hand-lever a^{15} pivoted to the frame A^1. The bearing h^1 of the bar h is pivoted to the frame A^1 at h^{20}, and is formed with a slot in which engages a second block on the inner end of the lever a^{15}. This slot is of such a curvature that a movement of the lever a^{15} to alter the length of stitch at the same time makes the necessary adjustment of the indenting-tool to or from the needle. The bar h is reciprocated by a spring, and tappets on the needle-bar.

Governing needle thread.—The thread for each loop is measured off by means of a finger e^1 carried on a rod which slides through a pivot at the middle of its length so that it can receive a combined longitudinal and oscillating motion.

Presser-feet ; presser lifted automatically.—The presser-foot is formed with a hollow e^{12} in which the finger e^1 works. The presser-bar is held down by a spring, and lifted by the needle-bar through a lever e^{10}.

Needles ; perforating-devices ; needles, hook, threading-devices for.—The combined awl and hook needle is shown in Fig. 6. It is threaded by means of a thread-eye D carried on a lever pivoted to the frame A^1 and operated from the needle-bar.

Work supports.—The work-support is held up by a spring, and is positively held while the needle penetrates the work, by a cam-operated clamp.

1494. North, W. S. Jan. 23.

FIG.13.

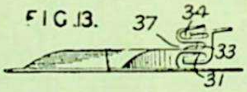


FIG.15.

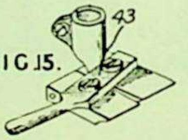
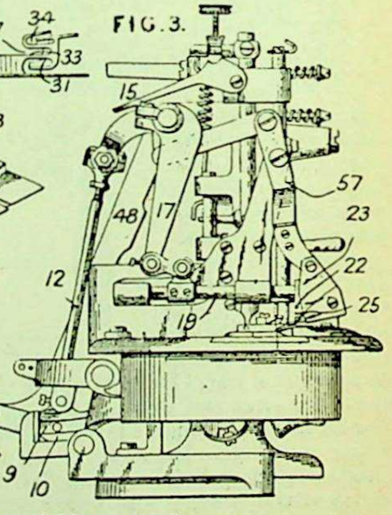


FIG.3.



Sewing-machine folding-attachments ; presser-feet ; work-supports.—The machine is more especially designed for gathering the back of a shirt and at the same time turning the edges and securing the double yoke. A rocking lever, operated by an eccentric on the main shaft, is formed with a curved rib adapted to engage in a curved slot 9 in a block 10 suspended by a link 12 from an arm of the rock-shaft 15, an arm 17 on the front end of which is connected with a sliding rod 19 carrying a head 22 to which is pivoted eccentrically a block 23 carrying the ruffling-blade 25. The block 10 is normally held out of engagement with the rocking lever which actuates it by connection with a spring-pressed lever 48 pivoted on the shaft 15; and the ruffling-blade is at the same time tilted up out of the way, against the action of a spring in the head 22, by the engagement of the lower end of a lever 57 with the block 23, this lever being connected with the lever 48 through a frame pivoted on the shaft 15. The ruffling-mechanism is thrown into action by means of a knee piece connected with the lever 48, and the position of this lever determines the throw of the ruffling-blade; and the lever 48 can be retained in any desired position by its contact with an adjustable eccentric stop. The presser-foot is bevelled on its under side at the front, as shown in Fig. 15, and is made in two parts loosely connected by a lever 43 so that one can move to a small extent independently of the other. A folder, for the special work mentioned above, and shown in Fig. 13, comprises three guiding-recesses 31, 34, and 37, the last to guide the edge of the fabric to be ruffled. The plate 33 extends forward to a point close to the needle. The part of the work-plate over which the ruffling-blade travels is raised.

1597. Macdonald, J. K., [*Singer Manufacturing Co.*]. Jan. 25.

Carpet-sewing machines; guiding-materials.—Consists of a guiding and pile-controlling device for the machine described in Specification No. 16,460, A.D. 1894. The reciprocating pile-deflector, which embraces the dividing-plate c^2, has a thicker and shorter forward part g, and a thinner and longer rear part g^1. The part g^1 is tapered as shown in Fig. 4, and carries a saddle piece h which embraces the carpet edges and prevents them from being too widely separated by the deflector.

FIG. 4.

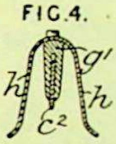
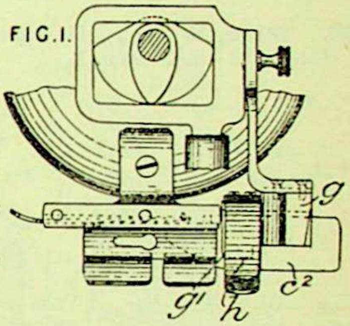


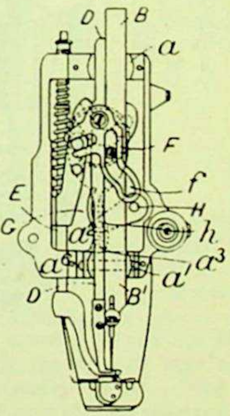
FIG. 1.



1598. Macdonald, J. K., [*Singer Manufacturing Co.*]. Jan. 25.

Sewing-machine feed; presser lifted automatically; presser-feet; hat-sewing machines; binding edges.—Relates to machines in which the work is fed by the needle, and is shown applied to machines for hat-binding &c. of the kind described in Specification No. 21,875, A.D. 1898. The needle-bar B^1 and the auxiliary presser and feed-bar D slide in oscillating blocks a, a^1, of which a^1 is carried by a bar a^2 sliding in the cross-bar a^6 of the frame. The feed-lever G, operated by a cam, is pivoted at a^3 to the bar a^2, and has a slot in which the fulcrum pin h can be adjusted to vary the feed by means of a hand-operated rock shaft H. The main and auxiliary presser-bars E, D are moved up and down alternately by a lever F pivoted to the bar D and having a cam slot f engaged by a pin on the needle-bar.

FIG 1



1896. Johnston, J. S., and **Magner, K.** Jan. 30.

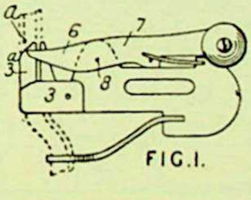


FIG. 1.

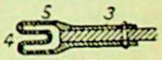
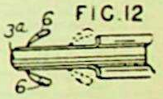


FIG. 7

FIG. 12



Sewing-machines, binding edges in; folding-attachments; guiding materials.—The chief object is to facilitate the turning of corners. The plate 3 is folded as shown in Fig. 7 to form a folder and guide 5 for the binding and a guide 4 for the edge of the material. The part 3^a forming a continuation of the guide 4 is embraced by spring arms 6 formed on a lever 7 pivoted at 8 and normally held in the position shown by a spring. On reaching a corner, the machine is stopped, and the lever 7 is moved so that the jaws 6 are at their greatest distance from the needle a. On the lever 7 being now released, the jaws 6, which are shaped as shown in Fig. 12, draw forwards a sufficient length of binding to go round the corner. In a modification, the guide 5, as well as the guide 4, is extended to near the needle, and points on the ends of the jaws 6 press on the binding through slots in the guide 5.

2092. Gillis, J. J., and **Bennett, J. F.** July 3, A.D. 1899, [*date applied for under Sec. 103 of Patents &c. Act, A.D. 1883*].

Sewing-machine folding attachments; presser-feet.—Consists of an improved hemmer. On an extension 4 of the presser-foot is secured the edge turner, consisting of a plate 11 turned over at 13, and the curved guides 14, arranged at right-angles to the turner 13, these guides being inclined as shown in Fig. 3, and with their lower ends under the adjacent part of the edge-turner. The turned edge of the hem is also guided by the edge 22 of the presser-foot. The width of the hem is determined by a guide 20, secured to the presser-foot as shown.

FIG. 3.

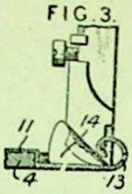
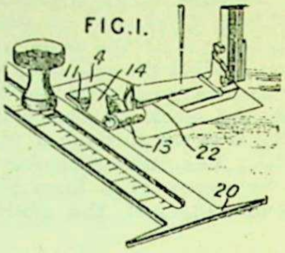


FIG. 1.



2096. Wise, W. L., [*Aktiengesellschaft vorm. F. Martini & Co.*]. Feb. 1.

FIG. 7.

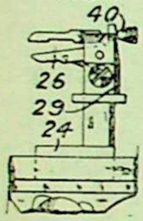
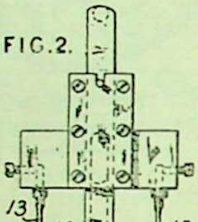


FIG. 2.



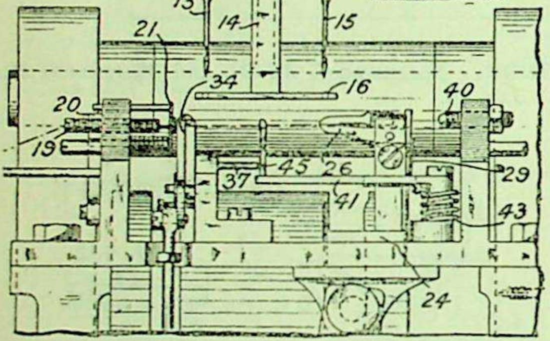
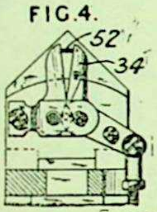


FIG. 4.



Book-stitching machines; multiple-needle machines; needles, hook, threading-devices for; thread-cutters; needle shields.—Relates to a machine in which a length of thread is drawn through two holes in the paper by means of two needles. Fig. 2 shows the upper part with the work-plate removed. The thread is drawn under a brake 20 through a longitudinal hole in a screw 19, and through an eye in a plate 21, which can be pressed to the left against a spring. The thread gripper is carried on a sliding carriage 24. It is opened, Fig. 7, by the engagement of the vertical tail of its lower jaw 26 with a stop 40, and retained open against the action of its closing-spring by the spring 29 which snaps under the lower jaw. In operation, the gripper moves to the left, until the fixed pin 37 pushes the spring 29 from under the jaw 26, allowing the gripper to close on the thread. As the gripper returns, the hooked needles 13 descend and the thread is pushed into their path by a pin 45 carried on an arm 41 connected by a spring 43 to a sleeve, which is turned by the movement of the carriage 24 to the right. As the gripper is opened on reaching the stop 40, the thread is cut by the cutters 34, and the needles draw the thread ends through the holes they have pierced. The cutter 34, Fig. 4, comprises two jaws geared together by the engagement of a tooth on one in a recess in the other. A pin 52 prevents the thread from leaving the jaws. The needles are guided in holes 16 of a plate secured to a bar 14, which slides in the needle head, and is connected to it by a spring.

2295. Ross, T. H., and **Andrews, E. N.** Feb. 5.

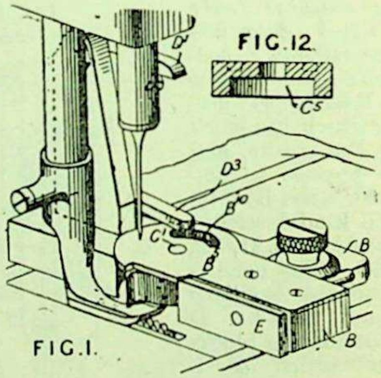
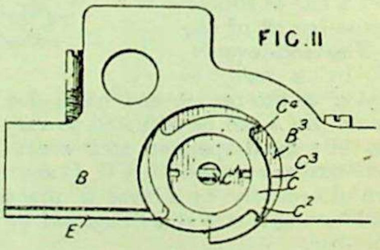


FIG. 1.

FIG. 11



Sewing-machines, overedge stitching in; ornamental sewing.—Relates to sewing-machine attachments by which the fabric is intermittently moved laterally for the purpose of forming zig-zag stitches. In the plate B forming the body of the attachment is formed a hole B^3 to receive a pusher-wheel C pivoted on a stud C^1 depending from a cover-plate B^5. The wheel C is revolved from a lever D^1 operated by the needle-bar, and carrying a pawl the chamfered point D^3 of which passes through a slot B^{10} in the plate B^5 and engages in slanting holes in the top face of the wheel C. These holes are eight in number, corresponding to the four spurs C^2, which have long faces C^3 and short faces C^4. Thus, on one ascent of the needle-bar, the edge of the cloth is pushed to one side by one of the faces C^3, and on the next ascent is allowed to spring back to its normal position. Frictional resistance is exerted on the wheel C by an adjustable spring plate carried on the stud C^1, in the recess C^5, Fig. 12. E is a guide-plate adjustable parallel to itself for the purpose of adapting the attachment to different thicknesses of material.

2321. Macdonald, J. K., [*Singer Manufacturing Co.*]. Feb. 6.

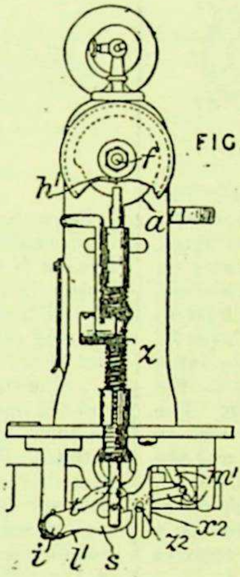


FIG.4.

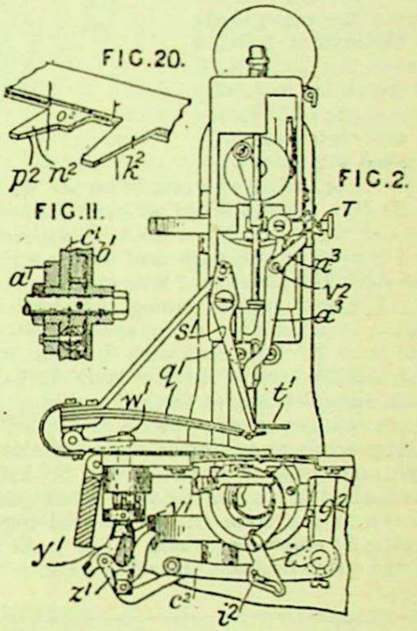


FIG.20.

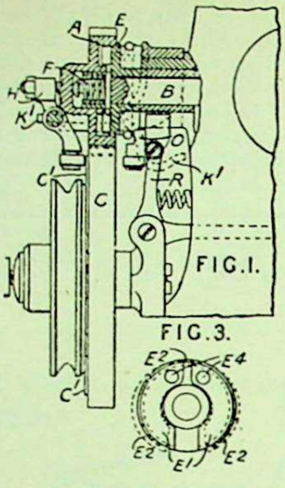
FIG.11.

FIG.2.

Buttonhole - sewing machines; thread - cutters; governing needle thread and under thread.—Relates to machines such as that described in Specification No. 20,409, A.D. 1895, for sewing buttonholes or other groups of stitches. Figs. 2 and 4 show opposite ends. The work having been placed in position, a hinged arm on the rock shaft i is engaged with a continuously-rotating cam by means of a hand-actuated bolt (not shown), thus depressing the arms s, l^1, c^2 carried by the shaft. The arm s draws down the bolt t connected with the belt shifter &c., so starting the sewing; the arm c^2 closes the toggle z^1, y^1, thus depressing the bolt v^1, w^1 and closing down the jaw q^1 of the work clamp; the arm l^1 and its pin z^2 allow the descent of the rod x^2, thus rocking the shaft v^2 and arms a^3, n^3 into their inoperative position. The under thread finger g^2 is also retracted by the pin i^2, and the finger s^1, t^1 by its connection with the jaw q^1. The shaft i is locked in its extreme position by the toggle m^1, m^1 connected to the arm l^1. During the sewing, therefore, the parts just described are locked in their inoperative positions by the toggles m^1 and 3^1, y^1. On the completion of the sewing, the toggle m^1 is unlocked by the engagement with it of a cam wiper, and the shaft i therefore allowed to return to its former position under the action of the spring z. The bolt t thus moves to shift the belt and ultimately stop the shaft f; the finger g^2 draws off under thread, the arm a^3 locks the upper thread in a slit in the needle bar, while the arm n^3 releases the tension T and draws off thread through it; the threads are cut; and the toggle z^1, y^1 is unlocked by the arm c^2, thus opening the work clamp and actuating the finger t^2 to pull out the loose end of needle thread. The threads are not cut till after thread has been drawn by the fingers g^2, n^3 to provide for starting the next sewing operation. The cutter, Fig. 20, comprises a fixed blade k^2, and a blade n^2, actuated from the shaft i, and having the parts o^2, p^2 by which the upper and under threads respectively are cut in succession.

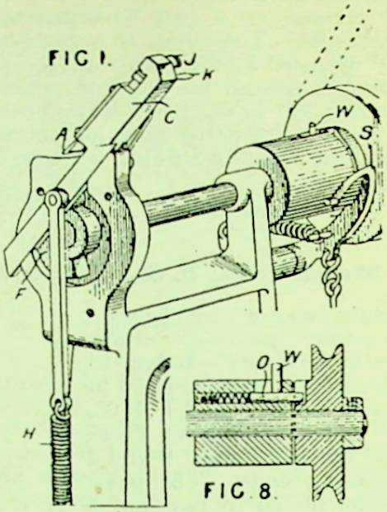
Stopping, automatic; stopping-gear.—The needle-shaft f is driven by a belt from the continuously-rotating shaft of the machine. It carries fast and loose pulleys, c^1, b^1, Fig. 11, to the former of which is secured a cam a^1. When the toggle m^1 is unlocked, the bolt t engages the high part of this cam, which thereafter controls the movements of the shaft i &c. until the parts are brought to rest by the engagement of the bolt t in the slot h^1. The cam a^1 is secured to the fast pulley adjustably, and with enough spring-controlled play to allow of cushioning.

2328. Singer Manufacturing Co. and **Pollock, R. A. F.** Feb. 6.



Ornamental sewing machines; buttonhole-sewing machines; buttons, attaching; driving; stopping-gear; stopping, automatic; speed, regulating. — Ornamental-sewing machines are driven at a high speed, or stopped automatically between each stitch, with a uniform speed of driving-pulley. The spur-wheel *c* connected to the driving-pulley drives the main shaft B through a friction clutch, the parts A, E of which are normally held apart by a spring F and intermittently pressed together by a lever H operated by a cam C^1 on the wheel C. The shaft B is automatically stopped with the needle out of the work by a latch O withdrawn from, and thrown into engagement with, a spring stop on the shaft B, by means of a second cam on the wheel C. For continuous running, the clutch is held in action by a hand-lever (not shown), elbow lever R, and lever K^1 connected with the lever H, the latch O which is secured to the lever R being at the same time disengaged from the spring stop. The improved spring stop, Fig. 3, is applicable also to button-sewing and button-holing machines and the like, and consists of two levers or half-discs E^1, pivoted at E^4 to the face of a fast pulley, or as shown to the cone E, and pressed together by a spring E^2 embracing them. The latch O engages in the space between their free ends.

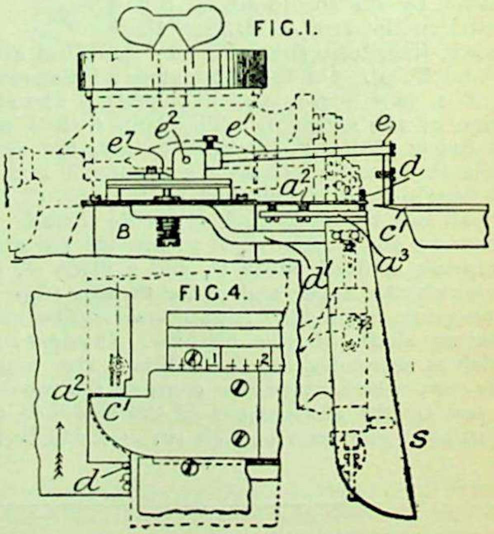
2640. Bertrand, J. E. Feb. 9.



Separating and indenting stitches.—Consists of improvements on the machine described in Specification No. 18,309, A.D. 1895. The tool A slides loosely in the carrier C, which, after the indentation of a stitch, raises the tool with it by means of a spring catch, until the catch is released by contact of a pin K on the tool with an adjustable stop J. The tool then drops lightly on to the work, and the operator is able to adjust the work until he feels the tool properly settled between two stitches. Then the carrier C, released by the cam F, is driven down against the tool by the adjustable spring H. The machine is stopped with the tool raised, by the engagement of a spring and treadle operated cam S with a projecting part W of the clutch pin O, Fig. 8.

2953. Seel, J. B. Feb. 14.

Sewing-machine folding-attachments; guiding materials. — Relates to means for forming parallel tucks. The machine is carried on a support B, preferably in an inverted position, and the tuck former c^1 on another support, so as to leave a clear space under it and over it for the work. In operation, the cloth is folded over the edge of the former c^1, which is then moved to the left by a lever to a distance determined by a scale, Fig. 4, carrying the fold between the needle plate a^2 and plate a^3 adjustable by screws. The work is then fed in the direction of the tuck in the usual way. The previously-formed tuck is embraced by a guide e, so that the next one is guided parallel to it. This guide consists of two fingers adjustable towards each other and carried on an arm e^1 pivoted at e^2 to a slide which can be moved to right or left to adjust the pitch of the tucks. A curved finger secured to one of the fingers e raises the tuck to facilitate its passage between the fingers e. A spring e^7 holds the guide c, either



raised clear of the work, or in the position shown. The edge of the former c^1 may be of the shape shown in Fig. 4, in which case a drag pin d keeps the work taut along it; or it may be straight and of some length. A movable shield s carried on an arm d^1 keeps the work from contact with the needle-bar &c.

3102. Macdonald, J. K., [*Singer Manufacturing Co.*]. Feb. 16.

FIG.2.

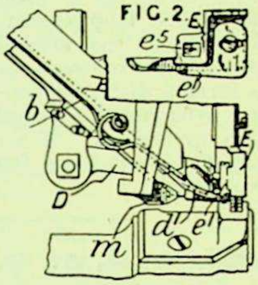


FIG.4.

Sewing-machines, buttons, attaching in; presser-feet.—The button-chute B of a machine of the kind described in Specification No. 30,183, A.D. 1897, is fitted at its lower end with a pivoted arm D having a slot d^1 which forms a continuation of the slot b for guiding the button shanks. The presser-foot E is fitted with a plate e^1, which acts as a stop to limit the forward feed of the buttons and properly locate them, and is adjustable by means of a screw and slot. The arm D is loosely connected with the presser-foot by a projection and corresponding recess e^5. The button feed-arm m is the same as that in the machine above referred to.

3319. Macdonald, J. K., [*Singer Manufacturing Co.*]. Feb. 20.

FIG.5.

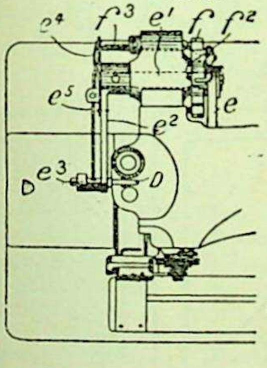
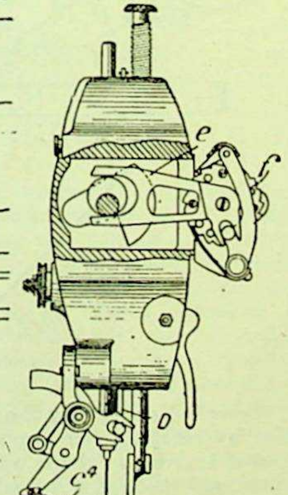


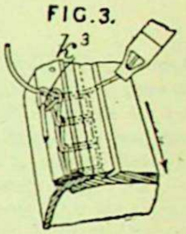
FIG.3.



Sewing-machine folding-attachments.—Relates to ruffling, plaiting, and gathering attachments. Fig. 3 shows a rear view, and Fig. 5 a plan. The blade c^4 is operated through an adjustable link and slot connection from a bar D, reciprocated independently of the needle-bar from an arm e^2 to which it is connected by a sliding pin e^3, which can be thrown into or out of a notch in the bar D by a lever e^5 pivoted to the arm e^2. The arm e^2 is secured to a rock shaft e^1, carrying at its other end a forked arm e embracing an eccentric on the driving-shaft. The pin e^3 is normally held out of engagement with the bar D by a spring e^4 acting on the lever e^5, and is intermittently thrown into engagement by pins f^2 carried on a ratchet-wheel f and adapted to operate the lever e^5 through a sliding rod f^3. The ratchet-wheel is operated, as shown in Fig. 3, from the arm e. In a modification the ratchet-wheel is replaced by a treadle-operated lever pivoted on the shaft e^1 and having an inclined end which engages the rod f^3.

3656. Boult, A. J., [*United Shoe Machinery Co.*]. Feb. 24.

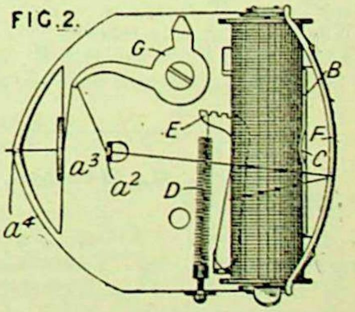
FIG.3.



Chain-stitching machines; governing needle thread; boot-sole stitching-machines.—The stitch last formed is set by pulling the loop afterwards drawn through it in the direction of the feed, binding action between the two loops being thus avoided. This is effected, as shown in Fig. 3, by a hook k^3 carried on a vertically-oscillated lever pivoted in a horizontally-reciprocated slide. Or the same effect may be obtained by a lateral movement of the needle, the needle segment being carried for this purpose in a horizontally-reciprocated slide. The invention is described in connection with a welt-stitching machine of well-known type.

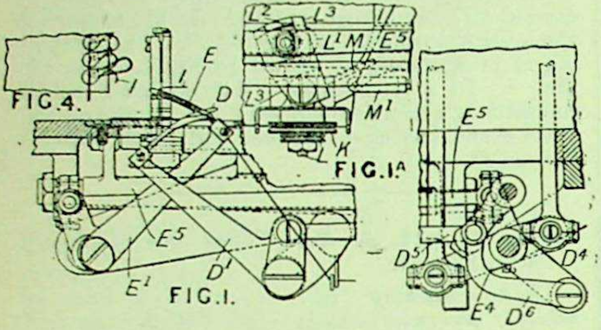
3971. Hamel, F. S., and **Vellacott, J. R.** March 1.

FIG.2.



Sewing-machines, governing under thread in.—A tension device for shuttles for looms and other machines consists of a plate C, which is caused to bear at a uniform pressure on the bobbin or spool B by means of a pivoted lever E, acted upon by an adjustable spring D and connected by a link to the plate C. In the shuttle illustrated, which is suitable for a Poyser tape loom, the thread passes over a curved bar F, through eyes a^2, a^3 and an intermediate eye in a spring take-up lever G, to the delivery eye a^4.

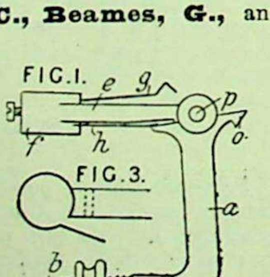
4080. Singer Manufacturing Co. and Mort, W. March 3.



Overedge-stitching machines; double-loop stitching machines; chain-stitching machines.—A hooked looper D engages the needle thread loop as the needle descends, and carries it beyond the edge of the fabric, where it is penetrated by the threaded looper E. The feed then takes place, and the needle on its next descent passes through the loop of looper thread I, which is laid over the fabric by the looper E. The stitch shown in Fig. 4 is thus produced; or a single chain-stitch, if the looper E be replaced by a looper similar to D. The bell cranks D^1, E^1 carrying the loopers are connected by rods D^5, E^5 to elbow levers D^4, E^4 operated from the upper shaft, an additional link D^6 allowing the looper D to have a dwell while the looper E is passing through a recess formed in it. Or the same motions may be obtained from an eccentric and a cam on a vertical shaft. A trimming-attachment may be provided.

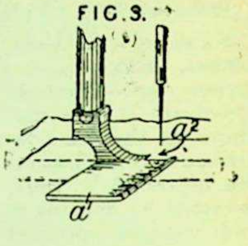
Governing needle thread and under thread.—Fig. 1A shows the measured pull off and tension for the lower thread; that for the upper thread is similar. The pull-off arm M works in a fork M^1. The tension K is intermittently relieved by a cam L^2 on an arm L^3 actuated from the rod E^5, engaging a roller L^1 on a rod L connected with the tension.

4232. Lawrence, C., Beames, G., and Ross, S. March 6.



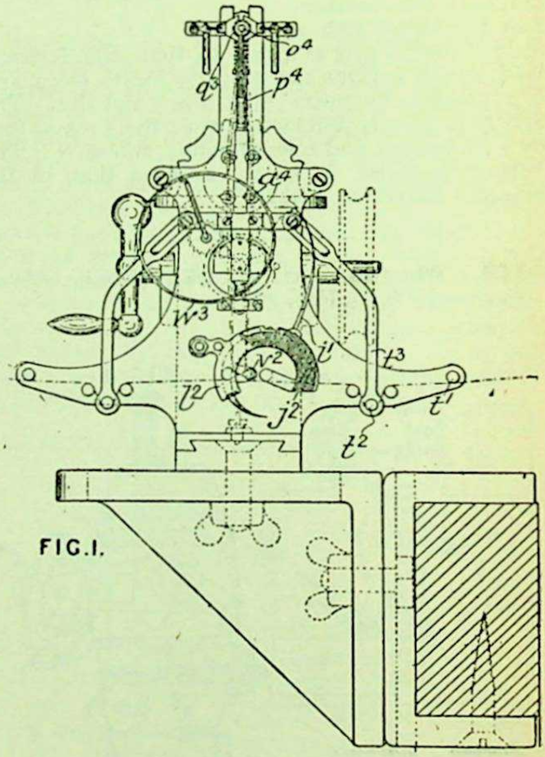
Needle-threaders for sewing-machines. The hook *b* is carried by an arm *a* hinged at *p* to an arm *e*, adjustable on the needle-bar by means of a collar *f* and set-screw. The hook lies in a slot in the arm *a*, and is secured by the nut *l*, or by a set-screw. The hook is withdrawn from the needle by the spring *h*, and the arm *a* is held out of the way by a spring *g* and catch *o*. In a modification, Fig. 3, the arm *e* is of thin steel so that it can be sprung on to the needle-bar and secured by a clamp screw.

4241. Zimmarman, M. March 6.



Sewing-machines, guiding materials in; presser-feet.—In order to keep the width of lapped seams constant as the sewing proceeds, the presser-foot is formed with an extension a^1 having its forward edge graduated. The corner a^2 is cut away for the needle.

4333. Goss, A. March 7.



Tying.—For joining the ends of threads and the like by twisting, the two sets of threads &c. are passed over bars t^1 from opposite sides of the apparatus, and through a forked guide v^2 to a spindle o^4, against which the ends are gripped by toggle-actuated clamps q^3. Between the guide and the spindle they pass over two pairs of reciprocating hook-bars a^4, having their hooks turned in opposite directions, and each set is divided into two series, which intersect each other between the hook-bars of each pair.

The reciprocation of the hook-bar allows one thread of each set to be caught by a rotating helical hook w^3, the rest of the threads being held back by an oscillating finger i^1. The hook w^3 delivers the pair of threads to the twisting-device, which comprises a rotating hook and rubber j^2 working in conjunction with a stationary rubber l^2. The rotating part carries a forked cutter for cutting off the ends of the threads, which are then pushed by the finger i^1 into a clip. The cutter is kept sharp by a spring-actuated sharpening-device, which acts upon it at each revolution. The spindle o^1 may be mounted upon vertically-moving rods p^4, in which case the slack in the threads is taken up by rods t^2 connected to them by links t^3.

4594. Newton, P. A., [*Keats, J.*]. March 10.

Drawings to Specification.

Boot-sole stitching-machines.—Relates to the manufacture of light shoes or pumps, and consists of a sewing-machine attachment by which the upper is smoothed and lasted as the sewing proceeds. The attachment is secured to the working arm, and is geared to the upper shaft which operates the needle. It comprises a pair of jaws which grip the upper and then move laterally in either direction as desired; and a pair of lasting-jaws which pull the upper over the last in a usual way.

5112. Noble, D. March 17.

FIG. 5.

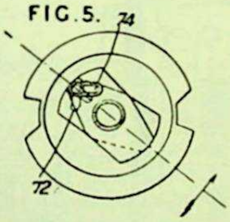
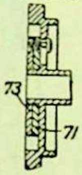


FIG. 6.



Sewing-machine feed; ornamental sewing-machines.—Relates to zig-zag sewing-machines, and consists of a device for stopping the feed so as to produce a bar after and before a certain number of regular stitches. This device is specially applicable with the starting and stopping device described in Specification No. 7662, A.D. 1899. On the hub of the counting-disc described in the above Specification is a cam engaging one end of the stitch-regulating lever to throw the feed intermittently out of action. The cam consists of two plates 71, 73 connected by a bolt which passes through a radial slot in the counting-disc and through oblique slots 72, 74 in the plates, and the nut of which rests in a recess in one of the plates. The length of the high portions of the cam can thus be adjusted to vary the number of barring-stitches made. The machine is arranged to stop with the centre of a high part of the cam engaging the stitch-regulating lever, so that half of each set of barring-stitches are made at the beginning, and half at the end, of each set of regular stitches.

5550. Macdonald, J. K., [*Singer Manufacturing Co.*]. March 24.

FIG. 1.

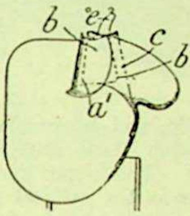
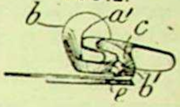


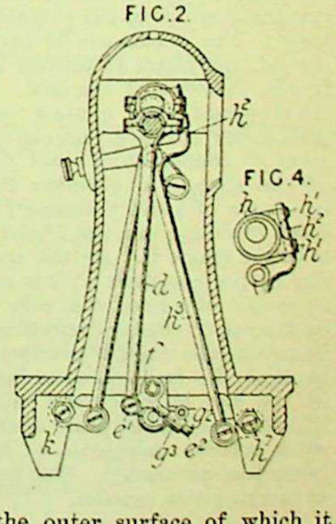
FIG. 2.



Sewing-machine folding-attachments; guiding materials; multiple-needle machines.—Fig. 1 shows a plan, and Fig. 2 an end view, of the entering end of an improved lap seam feller. The lower folder b, having a folding edge b^1, is provided with a tongue e extending beyond the main body of the feller so that its forward end is close to one of the needles of the two-needle machine employed, its outer edge being about in line, in the direction of the feed, with the outer edge of the forward end of the passage c for the lower ply of fabric. a^1 is the folding edge for the upper ply of fabric.

5551. Macdonald, J. K., [*Singer Manufacturing Co.*]. March 24.

FIG. 2. FIG. 4.



Lock-stitch shuttle sewing-machines; lubricating; feed.—The rocker e^1, e^2, which operates the shuttle shaft through the double sleeve g^2, g^3, is journalled on a hollow shaft f, and its arm e^2 is also hollow, and contains felt or the like. Oil is supplied to the hollow shaft f from an oil-hole in the frame, and flows by small passages to the bearing surface of the rocker, and thence into the hollow arm e^2, to the outer surface of which it escapes in a similar manner. The arm e^1 is connected by a rod d to a crank on the main shaft.

The upper part h^2 of the link h^3, connected to the feed-shaft h^7, is made hollow, to contain oil-soaked felt or the like, from which the oil escapes by small holes to lubricate the rubbing-surfaces of the part h^2 and of the ear or ears h^1 of the eccentric strap h. The vertical motion of the feed-bar is obtained from a shaft k operated by a second eccentric on the main shaft

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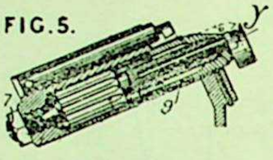
5652. Justice, P. M., [*Klemm, H. A.*]. March 26.

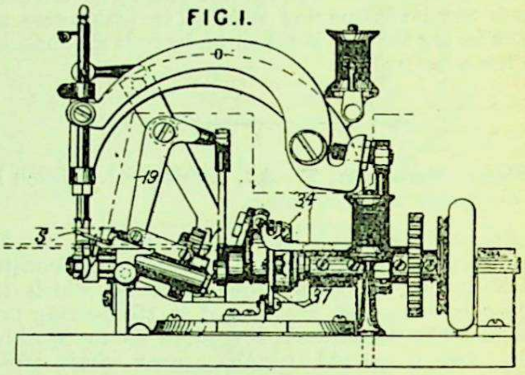
FIG. 5.



Overedge-stitching machines ; double-loop stitching machines.—The manipulation of the work is facilitated by the use of an ordinary vertical needle, and horizontal work-support and feed, and with these are combined improved looping devices The looper s moves in guides v inclined as shown in the vertical plane of the main shaft, and the oscillating hook y is carried on a shaft in the same plane, and parallel with the guides v. In operation, the needle passes through a loop of the looper thread, and then pierces the work, below which its loop is taken by the hook y and carried above the edge of the work to be penetrated by the looper s. The hook shaft is carried in adjustable bearings, Fig. 5, comprising the set-screw 7 and the socket 9. It is operated by a toothed segment from an eccentric on the main shaft. The looper is reciprocated by a bell crank 19 operated by another eccentric.

Governing under thread.—The looper thread passes through a take-up consisting of eyes in the fixed fork 34 and an eye in the arm 37 oscillated by an eccentric.

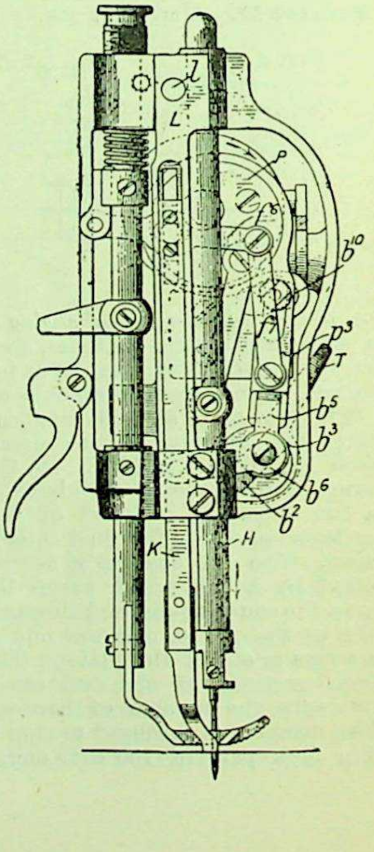
FIG. 1.



5975. Wheeler, S. H. March 30.

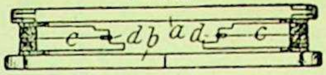
Sewing-machine feed ; presser lifted automatically ; needle-bars, vibrating laterally ; multiple-needle machines.—The object is to make the feed more accurate, as, for instance, where several plies of material have to be fed without any relative movement. The needle-bar H and a feed-bar K are carried in a frame L pivoted at l so as to oscillate in the direction of the feed. When the feed-bar is depressed into contact with the work, the presser-bar is raised, and *vice versâ*, by means of a lever f^6 connected by a rod f^7 to an extension p^3 of the strap of an eccentric P. The extension p^3 by means of a slot embraces a rod b^5 pivoted to a block b^3 sliding in a slot b^2 and connected by a rod b^6 to the frame L. As the rod b^5 is moved laterally by the eccentric P, it is also moved vertically by means of a fixed cam slot b^{10} in which a roller on the rod b^5 engages, and the consequent vertical motion of the block b^3 produces more or less movement of the frame L according to the inclination of the slot b^2, which can be adjusted by a handle T. The feed takes place when the needle is in the work, relative movement of the plies of material being thus prevented. The needle-bar is described as carrying two needles.

FIG. 2.



6305. Ellis, G. B., [*Ripberger, G.*]. April 4.

FIG. 2

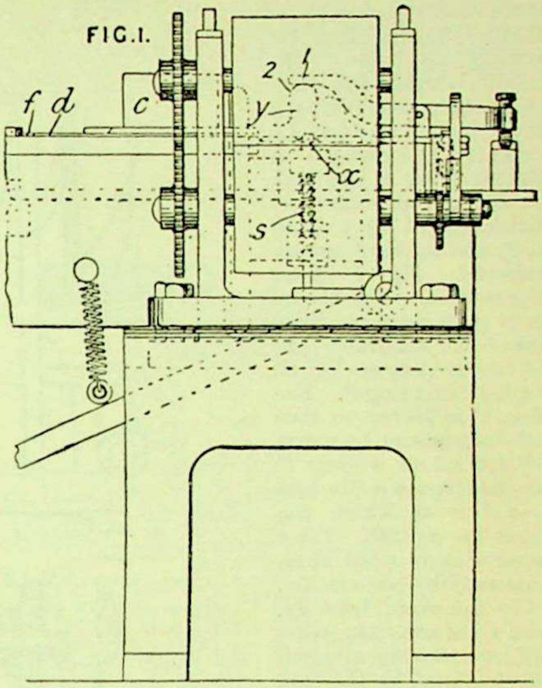


Embroidery.—The stays *c* or legs by which hand embroidery frames are supported in a raised position are hinged so that the frame *a* can be brought close to the stand *b* with the legs folded between them. The legs are held in their extended position by catches, or sliding collars. Or the central joints *d* may be so made as to allow the stays to fold slightly outwards when extended. In another modification, each stay is in one piece, and, when extended, their free ends rest in sockets in the stand *a*.

6350. Guise, J., and Ladbury, C. E. April 5.

Sewing-needles are automatically stuck into a travelling strip of cloth or the like in definite quantities. The needles are contained in a hopper *c*, which in one form of machine is movable and slides across the machine in guides and deposits a definite number of needles between the plates *d*. A plunger *f* forces these needles to the right into a band of cloth, which passes between a block *x* and a spring *y*, when the former has been raised by its supporting-springs *s*, the needles being guided in a level path by a spring 2 on the lever 1. The cloth roller is operated by a ratchet. When the hopper is fixed, a blade passes under its delivery edge, and separates the lowest row of needles from the rest while they are being pushed out by the plunger. The hopper may be divided by partitions, to separate the needles when assorted sizes are being stuck.

FIG. 1.



6656. Ashworth, A., [*Marshall, J.*]. April 10.

Bodkins.—Relates to a bodkin for use in a special apparatus for inserting ribbons and the like into hat leathers, and consists in providing a needle point *p* in the hole at the forward end of the bodkin. This point engages with the ribbon if the latter is drawn in a backward direction, and so prevents it from accidental disengagement from the bodkin. The needle point may be dispensed with, if several holes for holding the ribbon are made near the rear end of the bodkin.

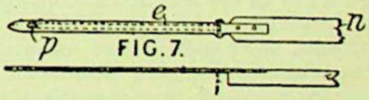


FIG. 7.

6754. Haddan, H. J., [*White Sewing Machine Co.*]. April 10.

Lock-stitch shuttle sewing - machines; governing under thread.—The thread for each stitch is pulled from the bobbin by a hook P, formed on a plate pivoted at P³ and oscillated by a cam on the shuttle shaft F. In order to adjust the amount of thread drawn off, the pin P³ is carried on a rod Q guided by a pin Q¹ and slot and connected to an eccentric pin on a shaft J. The part *p* of the hook serves as a guard, to prevent the needle loop from getting on the wrong side of the needle. The thread is drawn from the bobbin between an adjustable spring and an arm which are embraced by a fork on the shuttle cover so as to prevent rotation of the bobbin case.

FIG. 1.

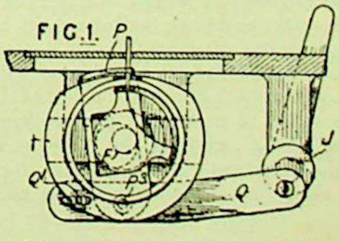
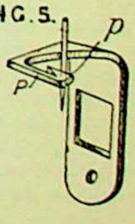


FIG. 5.



6908. French, Z. T., and **Meyer, W. C.** April 12.

FIG. 2.

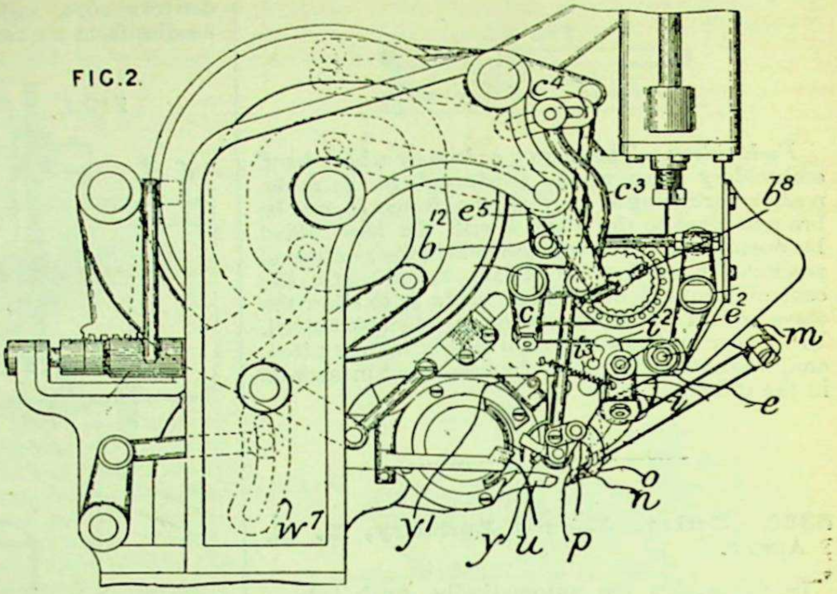


FIG. 7.

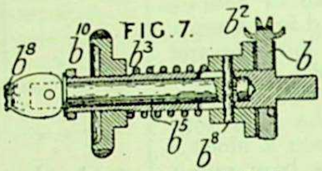
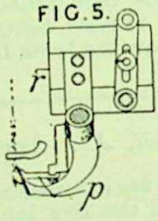


FIG. 5.



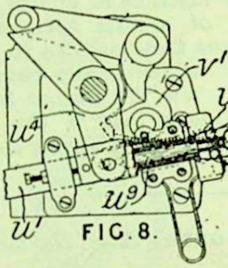


FIG. 8.

Wax-thread machines; governing needle thread and under thread; lock-stitch shuttle mechanism.—Relates to machines for sewing-on welts. The needle thread for each stitch is pulled off by a lever c, adjustably operated through a slotted lever c^4 and link c^3, the thread meanwhile being locked by a clamp e, e^2, and the hard tension relieved. Fig. 7 shows the tension. The thread is gripped between a fixed disc b and a movable disc b^2, under pressure of an adjustable spring b^3. The disc b^2 is moved to take off the pressure, by a cam b^{10} formed on a lever b^8 acting through a pin and a rod b^5 to which the lever is pivoted. The lever b^8 is operated automatically by an arm b^{12}. m is the main take up, and i the auxiliary take-up lever, having a movement limited by the stop i^3 and projections i^2. The arm e^5 which operates the thread clamp is formed on the same sleeve as the arm b^8, so that, when the thread is clamped, the tension is relieved, and, when the clamp is open, the take-up can set the stitch under a hard tension. The oscillating shuttle, which is in a plane parallel to the needle, and almost in line therewith, is given a motion bodily from and to the needle. Before each stitch, it moves from the needle, in order to draw off shuttle thread, the needle thread meanwhile being held tight by the take-up m. The shuttle then returns to take the loop, and withdraws, taking up the slack shuttle thread, which is given off as the shuttle moves a second time towards the needle while the stitch is being set. These movements are effected through a slotted arm w^7 from a four-phase cam. A loop spreader y is carried on an oblique shaft y^1, so as to move parallel with the shuttle axis.

Feed; perforating-devices; guiding materials; presser lifted automatically.—The work is fed by a finger p, which may also serve as a channel guide, assisted, if necessary, by an awl. Fig. 5 shows the finger p and the feed-slide r and its lever in plan. The awl, when used, is carried by the feed-slide, and also oscillates about an axis parallel to the needle but inclined from the vertical. The take-up lever m is so situated that the tension of the thread holds the work against the finger p. The welt-guide u, which also serves as a back gauge, is moved to and from the work by a friction clutch, which always withdraws it to the same distance no matter what the thickness of the work. Fig. 8 shows an elevation of a clutch for this purpose. The slide u^1, on which the welt gauge is carried, has pivoted to it a pin u^8 sliding in a sleeve u^9 connected to the operating-arm u^4. The sleeve u^9 has inclined faces u^{12}, adapted to engage rollers u^{13} carried by a second loose sleeve. Thus, as the sleeve u^9 is moved in a direction from the work, its faces u^{12} compress the rollers u^{13} against the pin u^8, thus carrying the slide u^1 in the same direction. A cam-operated catch v^1 locks the slide u^1 in the position it takes when the welt gauge is in contact with the work.

Needles, hook, threading-devices for.—The needle is threaded by the looper n and thread finger o.

7163. Greenhill, F. April 18.

Sewing-needles.—To facilitate the passage of the thread through the material, raised portions n^1 are formed at the end of the eye nearest the point. The other end of the eye may have the usual grooves n^3.

FIG. 2.

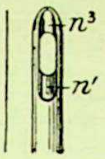
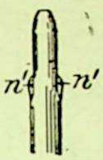


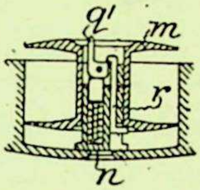
FIG. 3.



7178. Junge, C., [*Bernhard Stoewer Actiengesellschaft*]. April 18.

Lock-stitch shuttle sewing-machines.—The arm carrying the shuttle point is placed symetrically on the shuttle body, and connects therewith on either side by a gradually-curved surface. The bobbin has no cover, one of its flanges *m* being flush with one side of the shuttle. It is held in position on the pin *n* by a spring catch q^1, which, when raised, lifts the bobbin out of the shuttle, as shown, by means of the rod *r*, and which closes automatically when the bobbin is re-inserted.

FIG. 5.



7296. Lewis, J. C., Haight, L. M., and **Jenkins, W. H.** April 19.

FIG. 1.

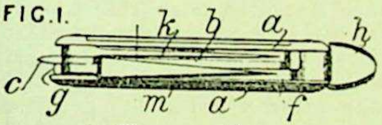


FIG. 2.

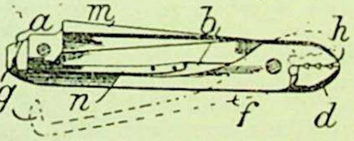


FIG. 3.

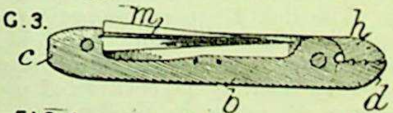
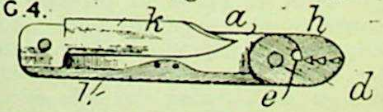


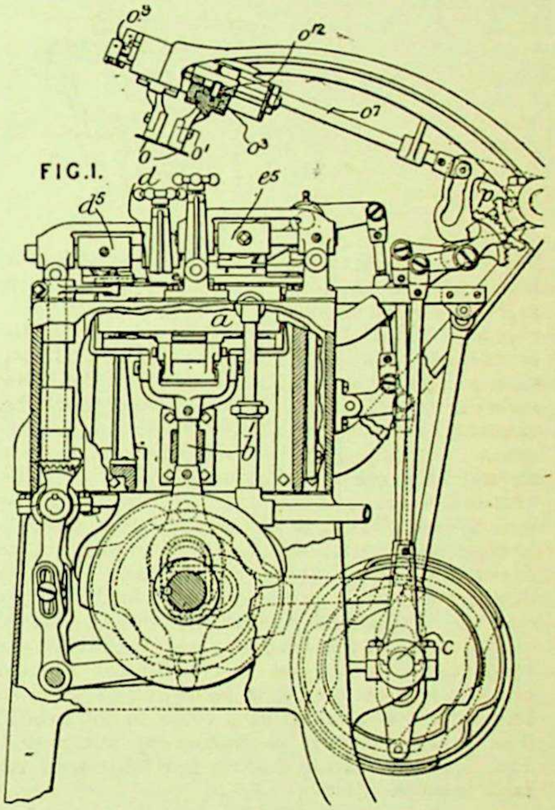
FIG. 4.



Stilettoes.—The space between the ordinary scales *a* of a pocket knife is divided by a central plate *b*, which projects at one end as a screwdriver *c* and is thickened at the other end to form one jaw *d* of a pair of wire cutters and pincers. The other jaw *h* is carried by a lever *f*, which occupies the lower part of the space on one side of the central plate and terminates in a hook *g*. In the space above this lever an auger or stiletto *m* is pivoted over a setting-spring *n* on the central plate, and the space on the other side of the central plate is occupied by an ordinary knife blade *k* and its spring *l*. In a modification, the pincers are replaced by nail cutters, and the lever is roughened as a file, while in place of the stiletto there is another knife blade.

7504. Fenwick, A. D. April 23.

FIG. 1.



Folding-instruments.—Relates to machines for folding the edges of blanks for collars, cuffs, and the like preparatory to sewing them together. The four parts *o* composing the templet are fixed to four brackets o^1, each of which slides in a block o^3, these blocks being in two pairs movable towards each other by rods o^9 actuated from a rod o^7. Pins o^{12} on the brackets o^1 engage in fixed diagonal slots so that the plates *o* move both parallel and perpendicular to the rod o^7. The rod o^7 is actuated by a cam slot in an arm *p* which is operated from a cam on the shaft C. In order to allow for the slightly-varying thickness of material due to the use of a stiffener in one only of a pair of blanks, the plates *o* are alternately expanded fully, and not quite fully, the cams operating them having two parts corresponding to these two positions of the plates; in addition to a third part corresponding to their collapsed position. The knives which fold the fabric over the edge of the templet are five in number, two on the bar d^5 and three on the bar e^5.

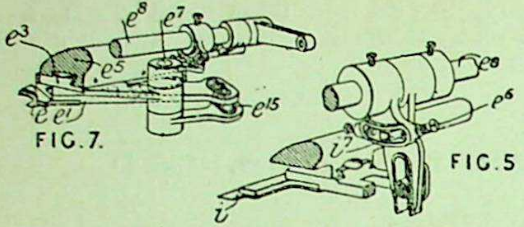


FIG. 7.

FIG. 5

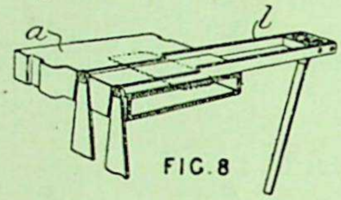
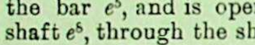


FIG. 8

The latter consist of two corner folding knives e, Fig. 7, and an edge-folding knife i, Fig. 5. Each knife slide e^1 moves obliquely in a slide e^3 adjustably fixed in the bar e^5, and is operated from the cam-actuated shaft e^8, through the shaft e^7 and cam slot e^{15} engaging a pin adjustably fixed to the knife slide e^1. In order that the knife i may move the necessary amount less than the knives e, lost motion is introduced between it and the shaft e^8 by means of the pin i^7 and adjustable stops e^6. The knives d on the bar d^5 are ⌊-shaped, and are moved with the bar d^5 towards the other knives, and also towards each other, these movements taking place in reversed order for alternate blanks. The bars d^5, e^5 are carried in pivoted brackets held down by clamps. The bed a is raised and lowered by means of cam rods b^1, and after the withdrawal of the templet plates receives an additional upward pressure to press the fabric between itself and the knives, by means of levers pivoted to the rods b^1. The folded blank is discharged by a carrier l, Fig. 8, which during folding lies flush with the table in slots.

7566. **Hollinghurst, J. H.** April 24.

FIG. 2.



Embroidery.—Relates to worsted or other coarse embroidery material twisted so as to have at one end a loop, by which it is attached to the needle, as described in Specification No. 432, A.D. 1888. The twist is now made of three or other odd number of strands, one of which, C, is doubled so that the loop A comprises four or other even number of cords. Lengths of yarn, prepared for making up into twist having either an odd or an even number of strands, are wound on a barrel, bobbin, or the like ready for use.

8068. **House, W. M.** May 1.

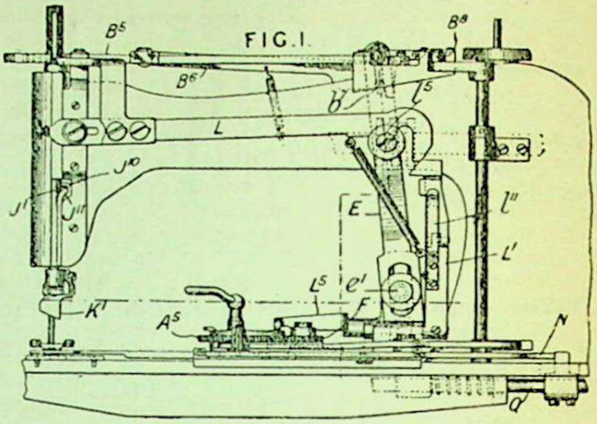
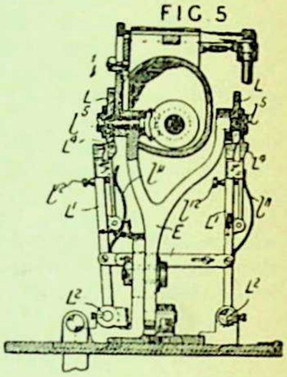


FIG. 5



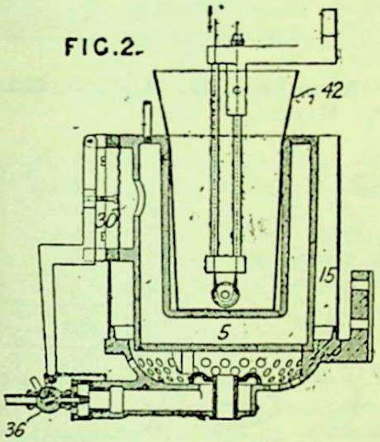
Buttonhole-sewing machines; buttonholes, barring; needle-bars, vibrating laterally; multiple-needle machines.—Two needles and their shuttles are employed, one for each side of the buttonhole. The work clamp receives a continuous to and fro transverse movement from a cam lever E, and, during the formation of the side stitches, a longitudinal feed from the usual adjustable crank-pin on a spur-wheel A^5 geared to another wheel F, half its size, actuated by a ratchet-wheel beneath it. The longitudinal feed is thrown out of action during barring by means of an intercepter plate carried above the ratchet-wheel and having three sets of teeth, two of which project beyond the ratchet-wheel teeth, while the third, between them, registers with the ratchet-wheel teeth. During barring, the needle-bar is oscillated through 180° by a rack B^5 operated through a link B^6, which can be dropped into connection with a pin b^7 on the lever E. The link B^6 in its inoperative position rests on a sliding bar B^8 under control of cams on the feed-wheel A^5. In a modification, the barring is effected by altering the position of the pivot e^1 of the lever E, so as to produce an increased transverse movement of the work clamp. A complete buttonhole is produced during one revolution of the wheel F, the order of operations being: barring one end, sewing the side stitches, cutting the slit, and barring the other end.

Buttonholes, cutting.—The slits are cut alternately by two cutters, one of which K^1 is shown. The cutters are normally held out of action by projections J^{11} engaging with projections J^{10} on the cutter-bars. Each cutter is operated by the needle-bar, and for this purpose is rotated to disengage the projections J^{10}, J^{11} and engage another projection on the cutter-bar with the needle-bar. This rotation is effected by links L, Figs. 1 and 5, which can drop into engagement with pins l^5 on the lever E. The links are normally held up out of action by supports L^1 carried on rock-shafts L^2 moved simultaneously through a lever L^5 from cams on the wheel A^5. The supports L^1 have pivoted to them supplementary supports L^4, pressed against stop screws l^{12} by springs l^{11}, the supports L^4 being slightly higher than the supports L^1.

Stopping-gear; stopping, automatic.—The brake is taken off, and the friction clutch through which the machine is driven thrown into action, by a rod Q, which is then held in position by a catch N, released on the completion of the buttonhole by a cam on the wheel A^5

8521. Boult, A. J., [*United Shoe Machinery Co.*]. May 8.

FIG.2.



Sewing-machines, waxing threads in.—The supply of gas to the burner of a wax-pot is controlled by the steam pressure in the hot-water jacket 5 acting through a diaphragm 30 on a lever connected to the gas valve 36. The water jacket is surrounded by a jacket 15 through which the products of combustion pass. The wax receptacle 42 is removable. Steam from the water jacket may be used for heating parts of the machine and returned through a condensing-coil.

8709. Cornely, E., and **Cornely, R.** May 11.

Ornamental sewing-machines; folding-attachments; braiding; embroidery.—Consists of attachments, especially applicable in universal embroidering-machines, for folding ribbons &c. as they are being sewn on to the cloth, or for folding and sewing ribbons &c. to form trimmings. A block R, Fig. 4, rotating with, but sliding on, the nipple Q, carries a horizontally-sliding block P, which is normally held to the left, as shown, by a spring S. The ribbon *a* is guided over pins A, C and a toothed plate B. In operation, as the nipple descends, the block P is at first held to the right until the collar O passes below the tapered block *b* on the spring S, when the block P moves to the left and completes the fold in the ribbon. The blocks R and P are raised by the projection Q^1 on the nipple Q. In a modification, Fig. 12, the fold is formed by the movement towards each other of two springs S, S^1, having horizontal folding portions. The collar X, to which the springs are attached, is moved vertically by means of a cam and elbow lever, not shown, and is rotated from the collar O or through separate gearing from the crank shaft. Fig. 20 shows another modification, in which feeding of the ribbon is effected by a spring 12, which presses it against downwardly-directed teeth on the block P.

FIG.12.

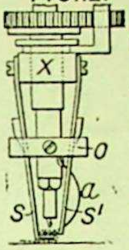


FIG.4.

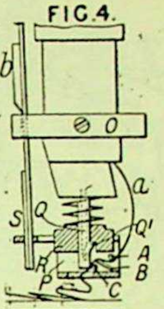
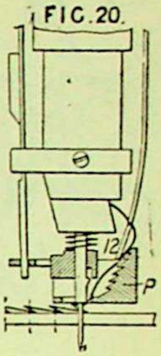
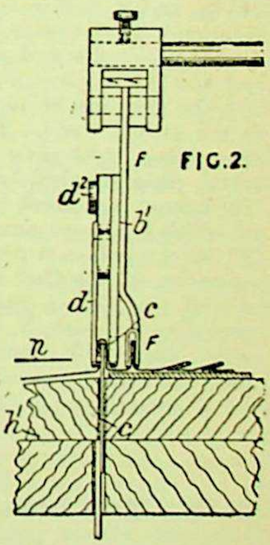


FIG.20.



9123. Welch, C. May 17.

FIG.2.



Sewing-machine folding-attachments; frames; guiding materials; work-supports; stands. — Relates to tuck-forming machines. An ordinary sewing-machine is supported, with its needle *n* horizontal, on an overhanging arm, and, after the sewing of each tuck, the work is moved to the right on to the large work-supporting area beneath this arm. The tucks are formed over a plate *c*, vertically adjustable between the needle plate b^1 and a cover-plate *d*, which is pivoted at d^2 so as to be easily raised for inspection of the work. The adjustable guide F, through which the previously-formed tuck passes, serves to determine the pitch and secure the parallelism of the tucks. A vertical plate, forming a continuation to the rear of the plate *c*, supports the tuck as it is formed. The left-hand part h^1 of the table is hinged at the rear, so that it can be swung round to expose the sewing-mechanism.

Lubricants, preventing transference of to work.—This is effected by guards, not shown, to the right of the guide F.

9134. House, W M. May 17.

FIG. 9.

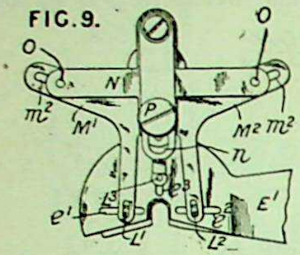


FIG. 2.

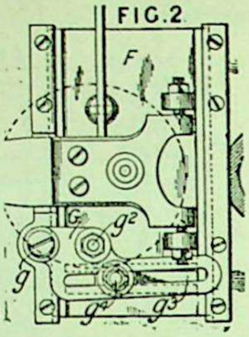
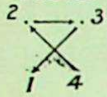


FIG. 8.



Sewing-machines, attaching buttons in; needle-bars, vibrating laterally.—The buttons are attached by diagonal stitches, a lateral vibration of the needle-bar being for this purpose combined with a vibration at right-angles to it of the button clamp. The needle-bar is carried in a frame oscillated by a cam, and the button clamp is carried on a plate F reciprocated through a lever G pivoted to the frame at g, connected to the plate F by the slot g^3 and pin g^4, and having a stud g^2 engaging with a ratchet-operated cam. This cam is in the form of a waved slot with two concentric portions or dwells, and a button is attached during one revolution. The stitches 1, 2, say, Fig. 8, are first formed ; then the stud g^2 enters one of the dwells, and the stitch 2, 3 is formed and then the stitches 3, 4, the machine being stopped with the stud g^2 in the second dwell. The button clamp, Fig. 9, comprises a rigid plate E^1 between which, and a spring plate attached below it, the button is held. The button is centered by means of pins L^1, L^2, L^3, of which L^1, L^2 are carried in slots in elbow levers M^1, M^2 pivoted on a pin P, which screws into an extension of the plate E^1, and connected by slots m^2 and pins O to a plate N. The pin L^3 is connected to the plate N, which has a slot n through which the pin P passes. Thus, by moving the plate N in the direction of the slot n, the pins L^1, L^2, L^3 are adjusted in the radial slots e^1, e^2, e^3.

9148. McCarthy, J. W. May 17.

FIG. 8.

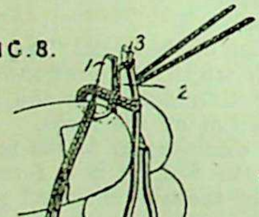
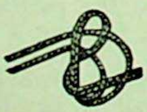


FIG. 10.



Tying or knotting.—A piece of metal, which is slotted at one end so as to form two arms 1, 2 and is provided with a tongue 3 at the other, is folded upon itself so that the tongue 3 may be pressed against the arms 1, 2. The instrument is held in the manner shown, and the ends to be knotted are passed round the back thereof, then round the front, again round the back, beneath the second finger by which the instrument is held, round to the front beneath the thumb, and through the slot as shown. The threads are then gripped between the tongue 3 and arm 2, and the ends broken off close to the point where they are held. The loop at the back of the instrument is then passed over the upper end thereof, and the knot is drawn tight while the broken ends of the threads are held firmly by the instrument. The completed knot is shown in Fig. 10. Instead of a single folded plate, two plates, suitably connected together by a spring, may be employed. The device may be used by the attendant upon a textile machine of any character where the ends of yarns or threads are required to be tied together.

9448. Bracher, G. S., and Gammons, W. P. May 22.

FIG. 1

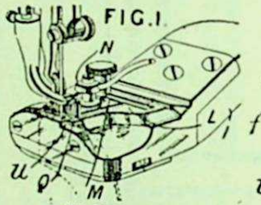


FIG. 3

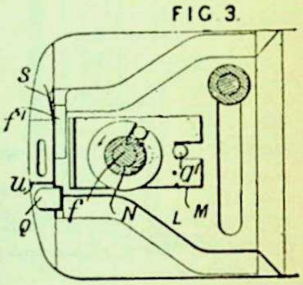


FIG. 8

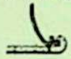
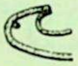


FIG. 9.



Hat-sewing machines ; binding-edges ; guiding-materials ; work-supports.—Relates to the attachment of binding to the curved edges of hats, especially those fitted with wires. The work-supporting arm is arched to take the hat crown as partially shown at I in Fig. 1, and at its front end is flat but with rounded edges. The hat brim is guided at the rear of the needle by a groove formed by a recess s in the needle-plate and a recess f^1 in the cover-plate L of the shuttle-race, and the binding is guided between the part of the needle-plate forward of the shoulder u and a plate Q secured between the needle-plate and the arm. The plate L has two studs f, g^1, which serve as guides to the gauge M. and on the stud f is pivoted a sleeve N formed with a radial slot engaging a stud on the gauge M, the sleeve N being frictionally held by a screw and spring. The gauge may thus be quickly adjusted to bring the stitching close to the edge, as in Fig. 9, or between the wire and the crown as in Fig. 8.

Lock-stitch shuttle sewing-machines ; governing under thread.—The shuttle is oscillated through a toothed segment carried on a lever curved to the shape of the work-supporting arm. The shuttle bobbin is carried on a hollow split pivot which tensions the thread.

9659. **Golby, F. W.,** [*Kleinberg, W., Hechter, J.*, and *Rosemann, B.*]. May 25.

FIG. 1.

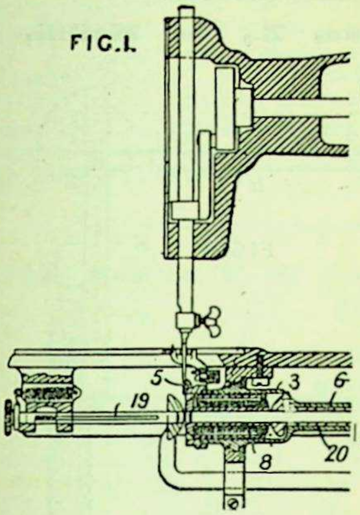
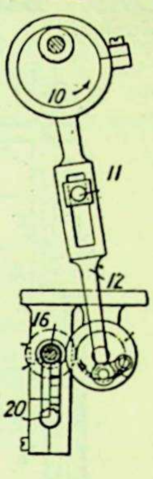
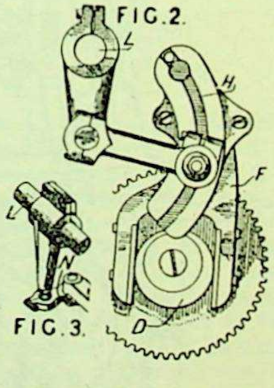


FIG. 2.



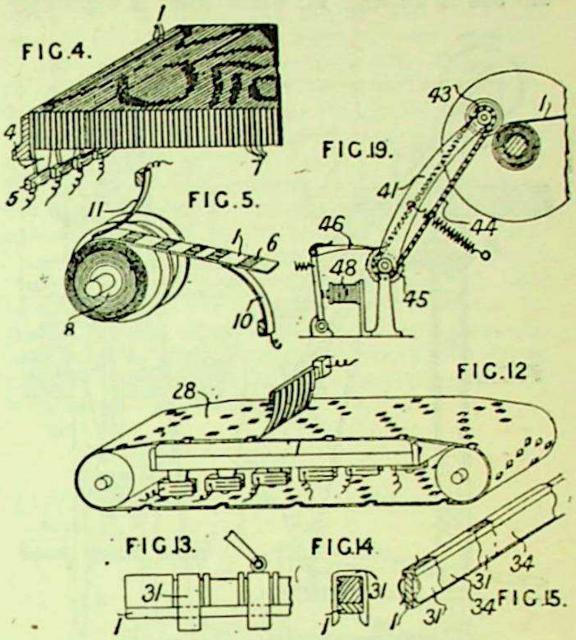
Lock-stitch shuttle sewing-machines.—The under thread is carried on an ordinary reel 8 in a case which is pushed to and fro on guide-rods 16, 19, so as to pass through the needle loop spread by the rotary hook 5. The hook 5 is formed on the enlargement 3 of the hollow shaft G rotated from an eccentric 10 on the main shaft through the rod 12 sliding on a fixed pivot 11 and a crank disc and gear-wheels, Fig. 2. The rod 19 can be withdrawn to remove the reel. The driver 20 is operated from another eccentric through bell cranks &c., and is guided by the rods 19, 16.

10,290. **North, W. S.** June 5.



Overedge-stitching machines; needle-bars, vibrating laterally; leather sewing-machines.—Relates to overseaming-machines producing a zig-zag stitch. The rock shaft L, from which the needle-bar frame is oscillated, is connected to a fork F embracing an eccentric D on a shaft geared to the driving-shaft. The part H, having the curved slot by means of which the length of vibration is adjusted, is adjustably secured to the fork F by a slot and screws, in order that the parts may be adjusted so that, when straight stitching is produced, it may be central in relation to the zig-zag stitches preceding it. The rock-shaft L is connected to the needle-bar frame through a horizontal link N, Fig. 3, having ball pivots at each end.

11,107. **Edwards, E.,** [*Handwerck, C.*]. June 19.



Embroidery.—Patterns or designs for electrically regulating the operation of embroidery machines &c. are formed of a series of insulated portions, each of which is included in a separate circuit. The insulated portions may consist of strips 1, Fig. 4, placed in recesses or grooves of a plate or separated by insulating-layers 7, and the design may be formed with some insulating-substance on the upper edges of the strips, as shown. In these cases, the circuit is made through projections 4 and elastic terminals 5. The strips may be in the form of flexible bands, Fig. 5, on insulated rollers 8, the circuit being made through elastic contacts 10, 11. Straight strips may be arranged either on edge or flat upon a drum, electrical contact being made by spring brushes. They may also be carried by endless chains, or they may pass in the form of a band from one roller to another between a fixed plate and the spring contacts. The points of the design may be produced by perforating paper or cardboard 28, Fig. 12, which may be either in the form of a sheet or an endless band. Metal clips 31, Figs. 13, 14, and 15, may also be arranged on the strips, alone or in conjunction with other clips 34 covered with an insulating coating. The band or bands may be fed forwards intermittently by a pulley 43, Fig. 19, which is carried by an oscillating arm 41 and driven by a chain 44 and ratchet gearing 45, 46 actuated by an electromagnet 48.

11,583. **McHaffie, W.** June 26.

Sewing-machines, driving; stopping-gear.—Relates to mechanism for driving sewing-machines &c. Motion is transmitted from the friction disc 5 on the shaft 4 to the wheel 3 of the machine by friction-wheels 19 and 20 mounted on a shaft 8, which runs in a support 6. The support is pivoted in a forked arm adjustably secured in a socket at the end of an arm 14, which itself is adjustably secured in a bracket 15 adjustable vertically on the frame 16. Normally the support hangs, as in Fig. 2, with the wheels out of gear. Upon depressing the treadle 23, the bell-crank lever 21 shifts the support, and presses the wheels into gear. A spring 28 assists in returning the parts to the normal position. The wheel 19 is adjustable along the shaft to vary the velocity ratio, and 20 may be reversed to rotate the machine in the opposite direction. A brake 29 may be actuated by the bell-crank lever 21.

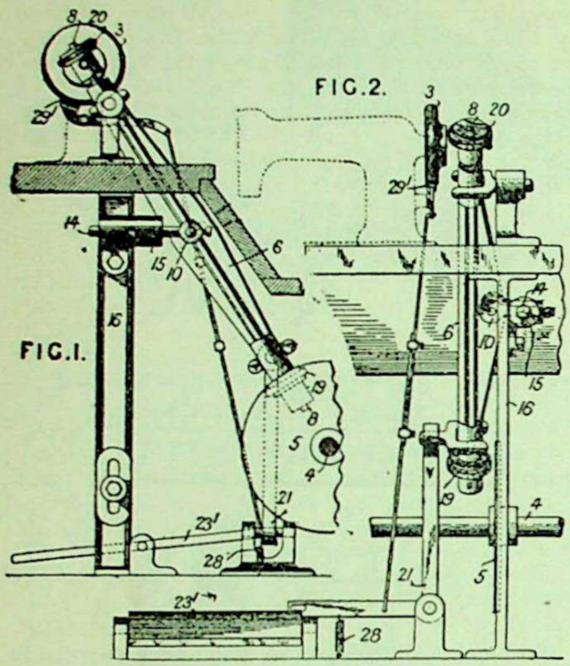


FIG.1. FIG.2.

11,646. **Dann, E.,** and **McGill, D.** June 27.

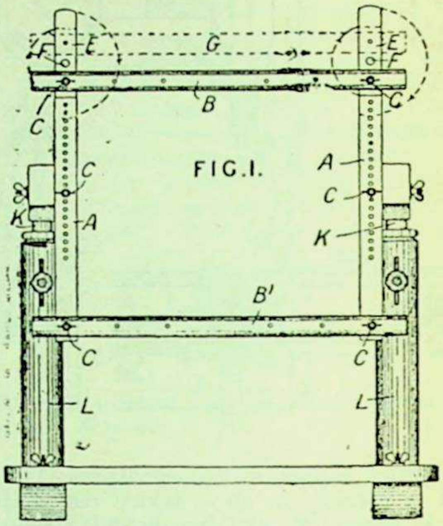


FIG.I.

Embroidery.—Consists of an improved frame and stand for embroidery. The side members A and clamps B, B^1, consisting of two parts enclosing a central slot, are pivoted together by screws C adjustable in different holes. The upper clamp B is pivoted to short levers E pivoted to the side members at F, and by rotating these levers the fabric is stretched, the upper clamp then assuming the position G. The frame is pivoted on posts K, vertically adjustable in supports L held together at the base by an adjustable distance-piece.

11,743. **Parkes, W. N.** June 28.

Ornamental sewing-machines; needle-bars, vibrating laterally; feed; embroidery. — The machine produces a large number of ornamental and embroidery stitches, this being effected by improved means for varying the lateral vibration of the needle-bar, either alone or in combination with variation of the feed. The mechanism is carried on a vertical plate P geared to the machine arm. The lever M, through which the needle-bar is laterally vibrated from the cam lever K, is pivoted on a plate H sliding in guides 1, 2. The plate H is reciprocated by the engagement of a block, adjustable in the slot *h*, in a slot in a gear-wheel F, which, like the wheel F^1, is oscillated by racks formed on a bar E^1, moved up and down by means of a cam B on the ratchet-wheel R. The position of the block k^{11} in the slotted lever K is controlled through the link M^1 and lever A carrying a block adjustable in a slot in the wheel F^1. Thus, by the rotation of the ratchet-wheel R, the position and extent of the needle-bar's vibration are automatically varied. The ratchet-wheel R is rotated through a pawl *l*, lever, and link from a block adjustable in a slotted plate on a disc D^1 geared to

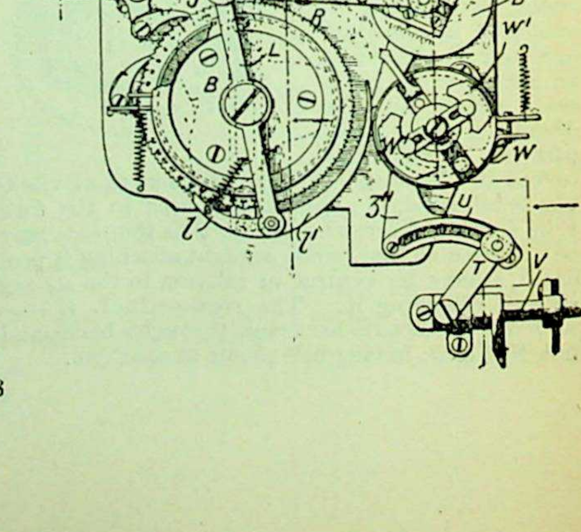
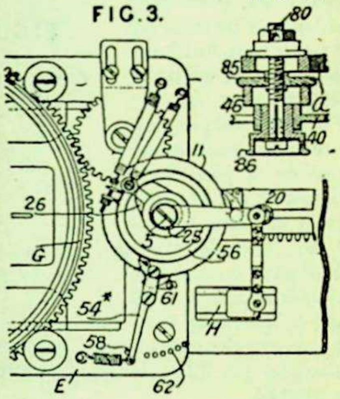


FIG.2.

the main shaft. The disc D^1 also carries adjustably by means of a set-screw D^{11} and slot D^{111} an eccentric which operates a ratchet-wheel carrying a disc *w* having radially-adjustable blocks w^1 adapted to engage the tail l^1, of the pawl *l*, and so throw the ratchet-wheel R out of action at predetermined times. The disc *w* also carries a cam operating a bell-crank lever z^{11}, U connected through a slot and link T to the shaft V, from which the feed is regulated. The position of the wheel R with respect to the cam disc *w* can be adjusted by means of the lever I and pawl J.

11,744. **Parkes, W. N.** June 28.

FIG.8. FIG.3.



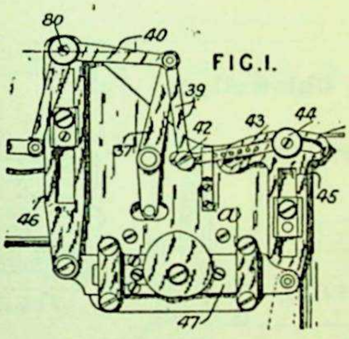


FIG.1.

Ornamental sewing-machines; feed; needle-bars, vibrating laterally.—The machine is designed to embroider automatically a number of designs, particularly on doyleys and the like. The work is fixed to a carrier G, Fig. 3, which rotates on a slide E. The carrier G is rotated through the gearing shown from a ratchet-wheel 11 pivoted on a stud 5 fixed the slide E, and preferably rotated from the feed-shaft H. The slide E is reciprocated by the engagement of cams connected to the ratchet-wheel, with studs on a slide 20, which can be longitudinally adjusted. Fig. 1 shows the mechanism for laterally vibrating the needle-bar. One end of the elbow lever 40 is connected to the needle-bar carriage, and the other by a link 39 to a pin 42 on one end of the link 43; the pin 42 is connected by a link similar to 39 to the upper end of the cam lever 37. The length of the lateral vibration is determined by the position of the pin 44, and the pin may be either fixed to the plate *a*, or automatically shifted by connecting it to the lever 45 operated by the cam slide 47. The position of the needle-bar's lateral vibration is automatically varied by connecting the pin 80, on which the lever 40 is pivoted, to the lever 46 also operated by the cam slide 47. The means for connecting the pin 80 either to the plate *a* or the lever 46 are shown in Fig. 8. The nut 85 on the pin 80 is locked against the plate *a* or the lever 46 according to the direction in which the pin 80 is turned by the head 86. The same method is used for the pin 44. The position of the ratchet-wheel 11 is adjusted by hand by the lever 54*, and pawl and ratchet-wheel 56. By means of a second pawl 61 and a pin 58, and a pin inserted in one of the holes 62, the wheel 11 can be turned a fixed amount by hand. Instead of an ordinary pawl for preventing back motion, there is provided a cam 26 carried on a hub 25 eccentric to the pin 5, and engaging with a flange on the wheel 11.

11,772. **Marks, G. C.,** [*Trenholm, H. A.*]. June 28.

FIG.3.

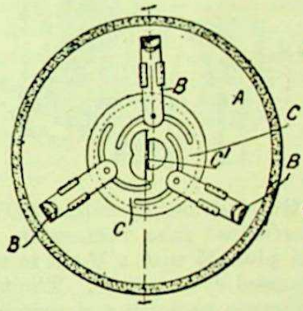
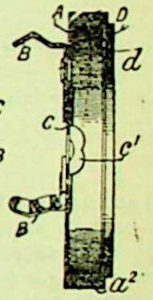


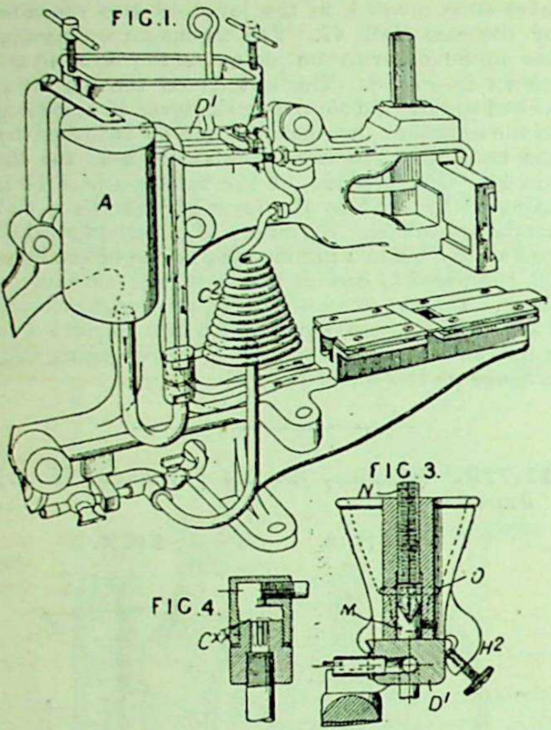
FIG.4.



Sewing-machine knife, needle, and like grinding and polishing attachments.—A cupped disc A, provided with jaws B by which it may be clamped on the pulley or flywheel of a sewing-machine, carries a rim a^2 of emery to be used for sharpening knives, scissors, &c. A polishing-ring *d* of felt &c. may be secured to a ring D which is pushed into the ring A. The clamping-jaws slide in guides on the disc, and are each set at an angle to a radius; their inner ends engage in eccentric slots in a disc C seated in a recess in the disc A and provided with a thumb-piece c^1.

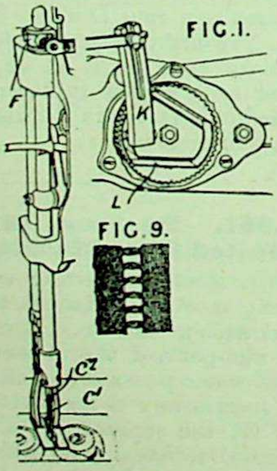
11,851. **Pearson, M. H.,** and **British United Shoe Machinery Co.** June 30.

Wax-thread machines; waxing thread; leather-sewing machines.—Relates to machines for heavy work such as harness. Improved means for heating the wax-pot and thread-controlling parts comprise a hot-water pipe starting at the supply tank A and led successively to a self-closing valve, gas-heated coil $C^{\times}$, the support D^1 of the wax-pot, a plate attached to the needle slide, into and round the shuttle box, and back to the tank A. The valve C××, Fig. 4, is seated in a case consisting of two parts screwed together. The thread draw-off hook is heated by contact with a plate carried by two rods at one end of the wax-pot support. The wax-pot, Fig. 3, is detachably secured by means of clips and a screw H^2 to the heated support D^1. It may contain a perforated false bottom O. The stripper is a metal plug M with a V-cut in which a rubber plug is pressed by a screw N. The top of the shuttle box is made separate, and secured on insulating-supports to prevent it from being unduly heated.



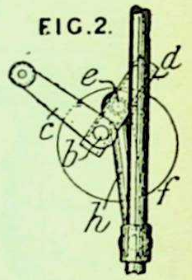
12,011. **Abercrombie, C. M.** July 3.

Hem-stitching machines; needle-bars, vibrating laterally; needle-holders; multiple-needle machines. — The needle-bar carries two needles c^1, c^2, and, in addition to its vertical motion, is oscillated about its axis from a cam L which revolves once for every three stitches. The shape of the cam, as shown, is such that for two out of every three stitches the needle c^1 descends to the left of its position for the third stitch, but before giving up its loop is moved back to its third stitch position, thus efficiently displacing the thread of the fabric. The motions of the needle c^2 are the same, but in the reverse direction, and the seam shown in Fig. 9 is produced. To allow of the motions above described, the needle-bar carries a sleeve to which the usual driving-link is connected, this sleeve being of the same external diameter as the upper part of the bar, which reciprocates through the sleeve F adjustably oscillated from the cam L through the slotted lever K.

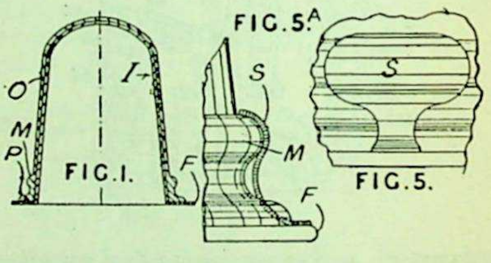


12,224. **Schleicher, M.** July 6.

Sewing-machines, governing needle thread in.—The take-up lever *c* is given a non-uniform motion to correspond with the non-uniform motion of the looper. For this purpose an extension of the needle-bar crank-pin *e*, or a pin fixed above or below it on the rod *h*, slides in a slotted arm *d* connected to the lever *c*, which is pivoted at *b* eccentrically to the crank disc *f*. In a modification, the arm *d* is replaced by a crank carrying a pin connected by a link to the pin *e*. The slot in the arm *d* may be straight or curved.



12,641. **Chiswell, A.** July 13.



Thimbles.—An outer part O, indented in the usual manner, is capable of revolving on an inner smooth part I, and can be separated from it. The two parts are fixed relatively to each other, by a pin P on the flange F of the part I engaging in one of several holes in the flange of the part O, and by a spring S, Fig. 5, secured to the flange F, and fitting over the moulding M of the part O and also engaging in one of several slots in the flange of the part O.

13,051. **Schleicher, M.** July 19.

Sewing-machines, governing needle thread and under thread in.—Consists of means for regulating the supply of both threads, and the tension of the upper thread, in accordance with the thickness of the work. The presser-bar is connected by a link *i* and pin *k* to a disc *c* pivoted at *d*, and a change in the thickness of the work, thus, through the presser-bar, rotates the disc *c* more or less. The thread passes through a tension *l* and over a roller *m*, both carried by the disc *c*, over a roller *n* on the take-up lever *e* pivoted at *d* and rotated from the needle-bar crank-pin, and over a fixed roller *o*. As shown by the diagram, Fig. 3, (where A is the position of the roller *n* when the pull on the thread ceases), the length of thread supplied depends on the difference between the lengths C A B and C D B, and this difference becomes less as the roller *m* recedes from the roller *o*, owing to the presser-foot taking a lower position. Thicker work also raises the point A, so causing the pull on the thread to cease earlier. Further, this regulates the amount of under thread pulled off by the projection *w* on the shuttle ; for, the thicker the work, the longer the part of the projection *w* which has to pass the under thread after the stitch is set, and, therefore, the greater the amount of under thread pulled off.

FIG.1.

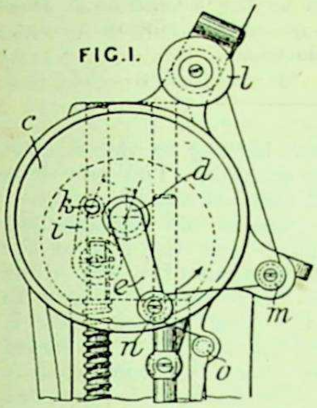
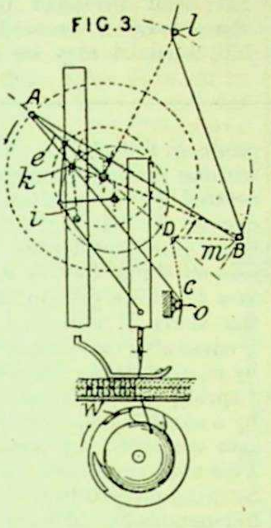


FIG.3.



13,603. Hillmann, M., and **Hillmann,** [*née* Nehls], **A.** July 28.

FIG.2.

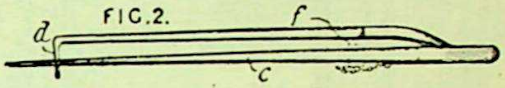
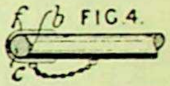


FIG.4.



Sewing-machines, setting needles in.—The needle *c* is positioned by means of a tongue *d*, which enters its eye, and a loose spring clamp *f*, Fig. 4, which holds it in the fork *b*. The tongue *d* is at right-angles to the axis of the handle of the setter, so that the setter is detached from the needle by pulling it free of the clamp *f* and then turning it slightly.

13,723. Dodge, C. W. July 31.

FIG.1.

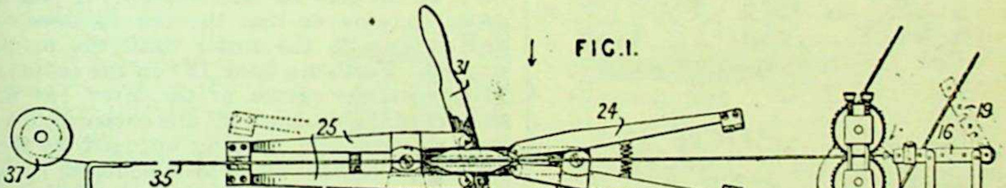


FIG.4.

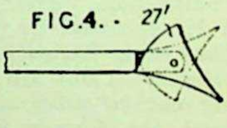


FIG.5.

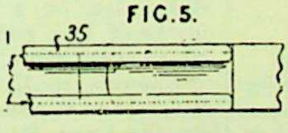
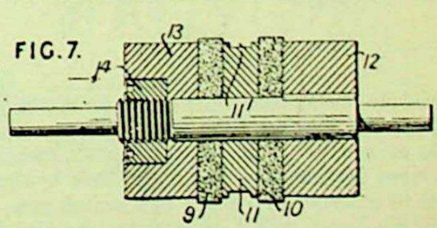


FIG.7.



Bodkins.—Relates to a machine for threading a strip of ribbon or other material through the perforations in lace &c. trimmings for corsets, underwear, &c. The lace passes between sets of bars on two friction tension frames 16, 19. The frame 19 is hinged, and is raised, as shown in dotted lines, when inserting the lace, and afterwards lowered and secured by a spring catch. The lace is fed into the machine by means of a pair of friction rolls geared together and driven by a belt and pulley. Each roll consists of a fixed collar 12, Fig. 7, two discs 9, 10 of rubber or flexible material, an intermediate loose grooved collar 11, and a loose collar 13 adjustable by means of a nut 14. When the discs 9, 10 wear, they are compressed by the adjusting-nut 14. The threading-needle or bodkin bears in the groove 11^1 in the collars 11, and has a pivoted switch point 27^1, Fig. 4 ; it is connected at the other end to a ribbon holder, which consists of a strip of metal with turned-over edges 35, Fig. 5. The left end of the ribbon holder is held by a bracket 36. Two sets of clamp arms 25, 24 can be made to alternately clamp or free the needle by moving the arm 31 to right or left. In operation, the lace is arranged in the tension frame 16, 19 and between the feed-rollers, and the ribbon is drawn from a reel 37 and passed through the ribbon holder up to the end of the needle. As the lace is fed on to the needle, the head 27^1 oscillates and passes through the holes in the lace After as much lace has been threaded on to the needle as it will hold, the clamps are reversed, and then the lace on the needle is pressed on to the ribbon holder, and the process is repeated till the ribbon holder is full, when it may be detached.

14,154. Parkes, W. N. Aug. 7.

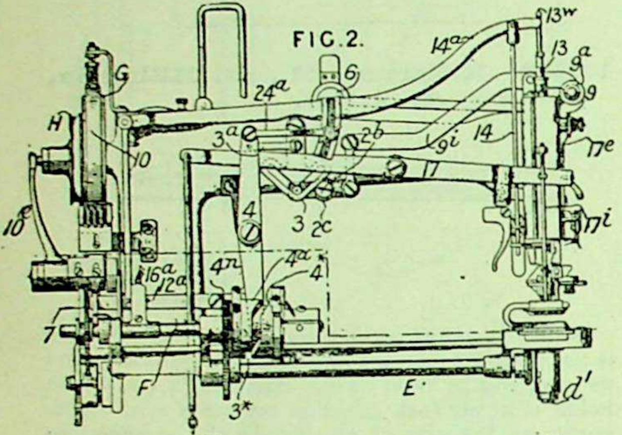


FIG.2.

FIG.20.

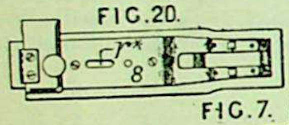


FIG.19.

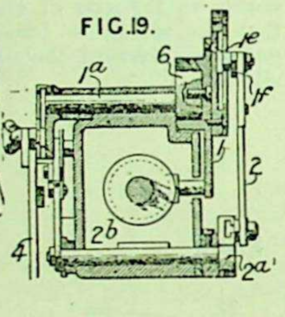


FIG.7.

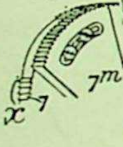


FIG.14.

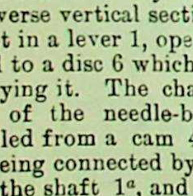
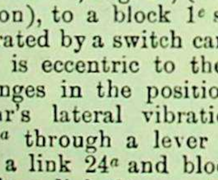


FIG.24.



Buttonhole-sewing machines ; needle-bars, vibrating laterally ; buttonholes, barring.—The needle-bar frame is connected by a link 1^f, Fig. 19, (which is a transverse vertical section), to a block 1^e sliding in a slot in a lever 1, operated by a switch cam, and pivoted to a disc 6 which is eccentric to the shaft 1^a carrying it. The changes in the position and extent of the needle-bar's lateral vibration are controlled from a cam 4^a through a lever 4, this lever being connected by a link 24^a and block and slot to the shaft 1^a, and by a link 3^a, cam lever 3, lever 2^c, shaft 2^b, slotted arm 2^a, and link 2, of adjustable length, to the block 1^e. The cam 4^a has two non-central dwells $3^{\times}$, $4^{\times}$, during which the side stitches are made, and two central dwells for the barring-stitches ; these dwells are connected by inclines, and the mechanism as above described produces the change from barring to side stitches without making mongrel stitches. The cam 4^a is rotated by a mutilated ratchet-wheel and pawl during the barring, the gaps in the ratchet-wheel being passed under the pawl near the end of the side stitching by the engagement of a pin on the cam 4^a with a pin on the gear-wheel 4^n secured to the shaft F carrying the feed ratchet-wheel 7. Undesirable movement of the shaft F is prevented by an adjustable friction clamp 16^a, connected by a spring to the frame. The shaft F is connected by a shaft E and gearing to a shaft d^1 carrying a cam embraced by jaws on the work carrier slide. This slide comprises an adjustable spring 8, Fig. 20, carrying longitudinal and transverse yielding shoes independently adjustable. Its actuating cam is set and tightened on its shaft d^1 by a screw reached through the slot $r^{\times}$. The clamp is opened by the lever 17 described in the next paragraph.

Buttonholes, cutting. — The cutter carrier 13, Figs. 2 and 14, is operated by a spring, against which it is normally held up by the engagement of the projection 13^c with the lever 13^d. This engagement is released by a pawl 13^j, carried on an arm 13^l of a rod 13^m turned by the cam surface (not shown) of a rod 14 operated through a lever 14^a from the part 12^a of the stopping mechanism described below, so that the rod 14 does not descend to operate the cutter until the machine is stopped. Further, a hook 13^w on the cutter carrier 13 prevents the return of the lever 14^a and the starting of the machine, till the cutter is out of the work. In addition to being engaged by the lever 13^d the projection 13^c is also engaged by a horizontal rod which does not release it until caused to do so by a projection on the work-carrier, when the latter is in the position it occupies on the completion of a buttonhole. The work clamp is opened by a rod 17^i, operated by the lever 17, which at the same time raises the cutter.

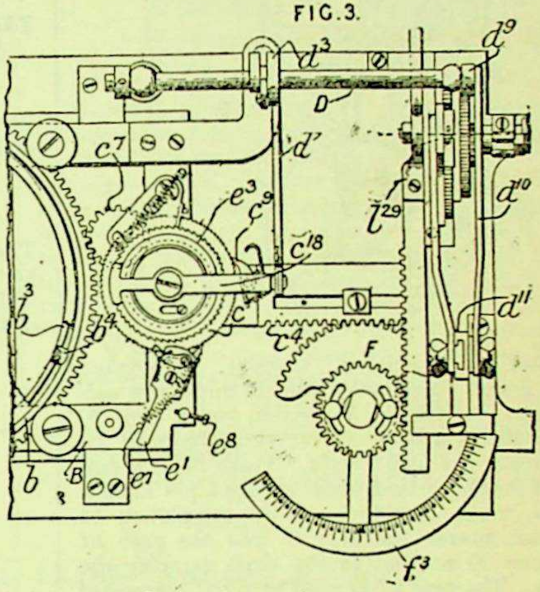
Governing needle thread.—There are two tensions 9, 9^a, the latter being relieved when barring begins by the lever 9^i, and the former by the lever 17^e operated from the lever 17.

Stopping-gear ; stopping, automatic.—The driving-pulley H is frictionally coupled to the fixed pulley G by a hand or foot lever 10^e, normally pulled to uncouple the pulleys and apply the band brake 10 by a spring the adjustment of which alters the position in which the machine stops. The lever 10^e is held in its coupling position by a lever 12^a engaging a latch 12, Fig. 24. The wheel 7 carries a lever 7^a, pulled one way by a spring and stopped in the other direction by the slot in which the spring lies. In the rotation of the wheel 7 the lever 7^a engages the lever 12^a, and lifts it on to the incline 12^d by which it is raised to operate the lever 14^a referred to above. This tripping of the stop-motion takes place when the pawl feeds on the tooth x, Fig. 7, of the wheel 7; and, to ensure the pawl always engaging this tooth and not an adjacent one, a few of the teeth preceding it are formed on a segment 7^m adjustable to leave between itself and the tooth x a space equal to the length of stroke of the pawl. The pawl is operated through an adjustable pin-and-slot connection, having the curve of its slot so situated that the pawl always starts its stroke in the same position, whatever the adjustment.

14,155. **Parkes, W. N.** Aug. 7.

Ornamental sewing machines; needle-bars, vibrating laterally.—The extent and position of the vibration are automatically varied by means of mechanism carried on the plate G, Fig. 1. The lever H, oscillated by the usual switch cam, imparts its motion adjustably to the elbow lever h^7 pivoted on a lever g^{14} and connected to the needle-bar frame. A slide g^{11}, reciprocated by a cam g^{10} and the ratchet mechanism shown, is connected to the levers g^{14} and h^9, which are adjustably pivoted on the plate G, and which respectively alter the position, and extent, of the needle-bar's lateral vibration.

FIG. 3.



Feed; work-supports.—The work is carried on a ring b, rotated through a change-wheel c^7 from a ratchet-wheel C pivoted to the slide B on which the ring b is carried. The slide B is reciprocated by the engagement of a cam fixed to the wheel C with jaws on a rack c^4, the position of which can be adjusted by means of the toothed segment lever F and gauge f^3. The wheel C is rotated from the cam lever d^{11} through the link d^{10}, arm d^9 fixed to the shaft D, and arm d^7 keyed to slide on the shaft D and connected to the lever c^{18} carrying the pawl c^9. The wheel C may be turned back by hand by a lever e^1 moving between stops e^7, e^8 and carrying a pawl engaging the ratchet-wheel e^3 carried by the wheel C. The lever F is operated to vary automatically the position of the rack c^4 by a rack l^{29} connected to a crank-pin l^{15}, Fig. 7, adjustable in a slot in a disc l^1 secured to a shaft L. This shaft is rotated by back gear comprising a pawl lever l^4, ratchet-wheel l^5, and gear-wheels l^7 &c. The lever l^4 carries two pawls, one half a tooth in advance of the other. The work is held between two hoops b^3, into a notch in the outer of which a spring b^4 normally presses.

FIG. 7.

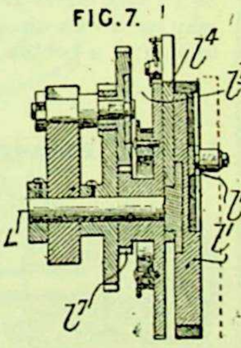
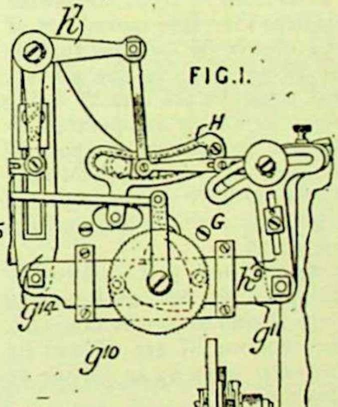


FIG. 1.



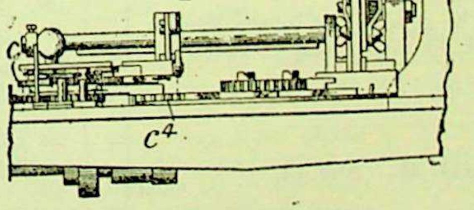
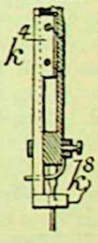


FIG. 18.



Presser-feet; presser lifted automatically.—The presser-foot k^8, Fig. 18, is carried by a plunger k^4 sliding in the hollow needle-bar, which also contains the presser spring.

14,330. **Cornely, E.,** and **Cornely, R.** Aug. 10.

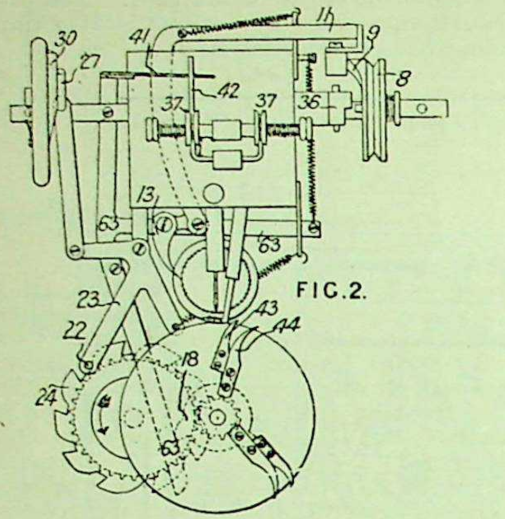


FIG. 2.

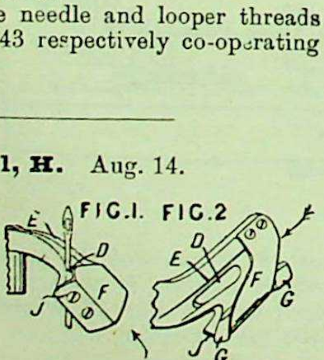
Glove-sewing machines; stopping, automatic; stopping-gear.—The clutch pulley 8, through which the sewing-mechanism is driven, has a cam 9, which oscillates a lever 11 carrying the pawl 13 which rotates the feed-wheels. Teeth 24 of a disc geared to the larger feed-wheel engage a pin 22 on a lever 23, which therefore, on the completion of each seam, moves the arm 27 into the path of a face cam 30 secured to the shaft carrying the pulley 8. The arm 27 is fixed on a rod connected with the pulley 8, which is therefore moved out of engagement with the clutch 36 by the further rotation of the cam 30, so stopping the sewing. The sewing is started again by the arm 27 being moved first to the right by a lever 37 operated by one of three teeth 18, and then out of the path of the cam 30 by the engagement of a tooth 24 with the pin 22. The three teeth 18 rotate with the larger feed-wheel, the periphery of which is long enough to carry three gloves.

Governing needle thread and under thread.—While the sewing is stopped, the feed continues, in order to pull off enough thread to form a loose end. For this purpose the tensions 37 are relaxed by wedges 42 pressed between them by an incline 41 connected with the lever 63.

Thread-cutters.—The needle and looper threads are cut by knives 44, 43 respectively co-operating with a fixed knife.

14,559. **Marshall, H.** Aug. 14.

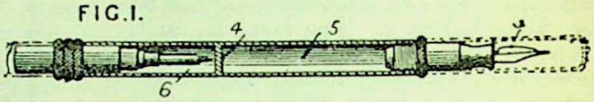
FIG. 1. FIG. 2.



Boot-sole stitching-machines; grinding materials; work-supports.—An improved welt guide is shown in elevation and plan in Figs. 1 and 2. The welt strip passes under a metal strip F attached on one side to the work-guiding rib E, and on the other to the side J of the work-support. The width of the hole through which the welt strip passes may be adjusted by a liner G. D is the needle-hole. In operation, the toe part of the upper only is pulled over the last, and the sewing together of the upper sole and welt then proceeded with without further lasting.

14,706. **Dymond, G. C.,** [*Goldsmith, B. B.*]. Aug. 16.

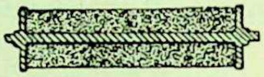
FIG. 1.



Pin and like cases combined with reservoir pens. The compartment 6, separated from the ink reservoir 5 by the partition 4, may be used as a receptacle for pins &c. The penholder may be formed in two parts, which are screwed together.

14,718. **Cuntz, G. R. F. H.** Aug. 16.

FIG. 2



Lock-stitch shuttle sewing-machines.—Shuttle bobbins are supplied ready wound, and are made of a cheap material, preferably paper, so that they may be thrown away when empty. Fig. 2 shows a section of a bobbin.

15,054. **Flanagan, D.** Aug. 23.

FIG. 3.

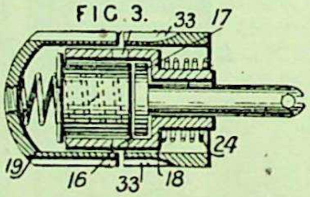


FIG. 2.

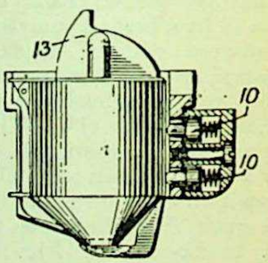


FIG. 6.

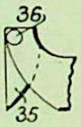
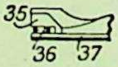


FIG. 7.



Lock-stitch hook sewing-machines; governing needle thread and under thread.—The reel case holder of a two-reel machine is carried on a vertically-pivoted arm which, under the action of a spring, tends to swing the holder into an accessible position. This action is normally prevented by the engagement of a spring pin on the arm with a hole in the work-plate. This hole contains a spring pin by which the first spring pin can be disengaged. Spring pins 10, Fig. 2, control the loop as it is drawn off the reel case, and a curved plate 13 projecting through a slot in the holder regulates the last part of the delivery of the loop. The required amount of needle thread is pulled off before each stitch by the device shown in Fig. 3. The thread passes through holes at the extremities of slots extending half way round hollow cylinders 18, 19, and between two nipping-discs 16, 17 in the cylinder 18. The disc 17 is moved to nip, and in its further motion to pull off, the thread, by connection to a cam lever operated by a roller on the needle-bar. The thread is retained in the holes in the cylinders 18, 19 by a fork engaging in recesses 33. A spring 24 carries an eye through which the thread passes. Figs. 6 and 7 show the hook. Between the beak 35 and a plate 37 secured to the flat side of the hook is a cylinder 36. The thread passes into the recess between the plate and beak.

15,407. Ross, T. H., and **Andrews, E. N.** Aug. 29.

FIG.1.

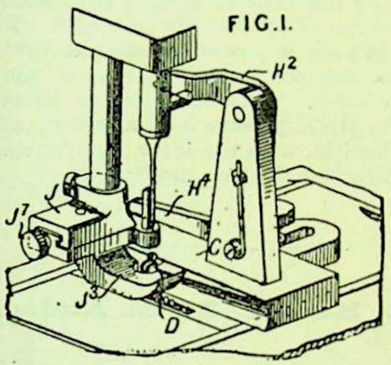
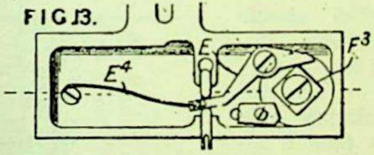


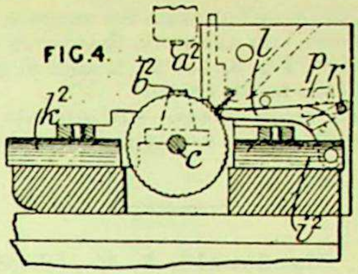
FIG.13.



Overedge-stitching machines ; presser-feet. — Consists of an attachment by means of which the edge of the work is intermittently pushed out of the path of the needle. The attachment comprises a casing C adjustably secured to the work-plate. A bar D, forked at its extremity to embrace the needle, is reciprocated to engage the work by means of a lever E, Fig. 13, spring E^4, and angular cam F^3. This cam is rotated by a pawl H^4 carried by an elbow lever H^2 operated from the needle-bar, the pawl having a beak projecting through a slot in the casing C to engage slanting holes in the cam disc. The presser-foot is formed in two parts J, J^3, connected by slide ways so that the part J^3 can be adjusted horizontally by the screw J^7 and nut to suit work of different thicknesses.

15,727. Milward & Sons, H., and **Davis, S.** Sept. 4.

FIG.4.



Sewing-needles.—Relates to stamping-machines in which the head of the needle is flattened, and the initial depressions for the eye are formed. The needles are fed between the dies a^2, b^2 by two transversely-grooved wheels arranged one on either side of the lower die. These wheels are intermittently rotated by a finger l engaging a toothed wheel carried on their shaft c. The finger l is carried by a slide i^2 reciprocated by a lever actuated by a cam on a vertical shaft. A similarly-operated slide k^2 carries a finger adapted to lock the feed-wheels during the stamping operation. The needle blanks are fed to the rotary carrier down an inclined shoot, and are prevented from jamming by levers p projecting into the shoot and oscillated through a rock-shaft r operated from the finger l.

15,749. Spitzer, M. Sept. 4.

FIG.4.

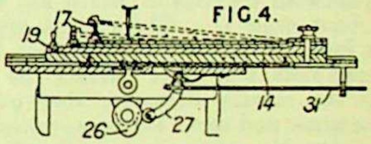


FIG.8.

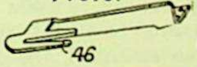
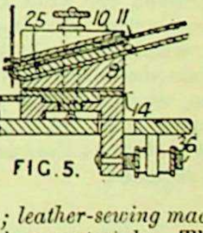


FIG.5.



Blind-stitching machines; leather-sewing machines; work-supports ; feed ; guiding materials.—The improved machine is especially designed for sewing the seams of leather measuring-diaphragms used in dry gas meters. The two pieces of leather to be joined are held, as shown in Fig. 5, in a clamp comprising three pieces 9, 10, 11. These pieces are at one end riveted together and pivoted to the carriage 14, so that they tend to spring apart at the other end, as shown in dotted lines, Fig. 4, and can be turned at an angle to facilitate insertion of the work. Sharp pins 25 hold the goods together, so that pasting is unnecessary, and the clamp is closed by levers 17 having pins which engage with cam surfaces 19. The carriage 14 moves in a guide which can be moved laterally to suit different thicknesses of material by means of screws 36 &c. The work is fed by a cam lever 27, carrying a pawl which can be thrown out of action by the rod 31. In a modification, the plate 9 and carriage 14 are in one.

Needle shields.—To ensure the accurate entrance of the needle into the work, the shuttle carries a needle guide, Fig. 8, having a tapered groove 46 into which the needle enters.

Governing needle thread. — A separate take-up lever is operated by a connection from the needle-bar.

15,990. **Macdonald, J. K.,** [*Singer Manufacturing Co.*]. Sept. 8.

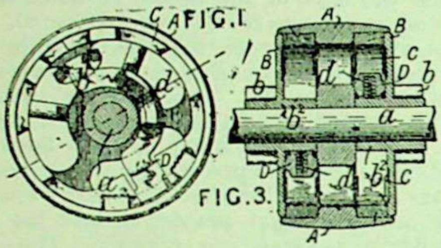


FIG.1 FIG.3.

Sewing-machine feed.—Relates to clutches for transmitting motion from a rotary reciprocating driving-member to a continuously or intermittently rotating driven member, applicable for the operation of sewing-machine feeding-wheels. The part A secured to the spindle *a* is formed with two annular recesses for the reception of the divided rings C, between the ends of which are fitted the ends of bent arms D. These arms are pivoted between lugs b^1 on the driving-members B, which are formed with pinions *b*. When the parts B move in the driving direction, they carry with them the arms, and these, taking an inclined position between the ends of the rings, force them apart and expand the rings in the recesses in the part A, which is thereby locked to one of the parts B. Upon the backward movement of the parts B the arm, which may be provided with springs *d*, bears upon their bosses b^2. For imparting intermittent motion to the part A, one driving-member only is required.

15,991. **Macdonald, J. K.,** [*Singer Manufacturing Co.*]. Sept. 8.

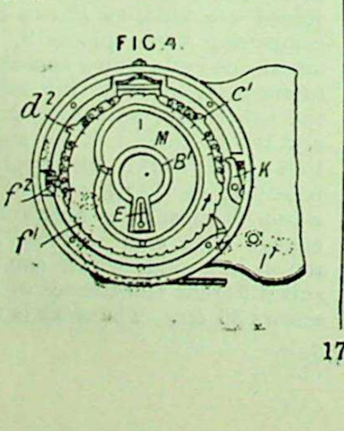


FIG.4.

Buttonhole - sewing machines ; stopping-gear ; stopping, automatic ; buttonholes, cutting.—Consists of means for setting the feed-mechanism to sew a buttonhole of given length. The feed-wheel M, which is pivoted on the hollow stud B^1 and covered by the cloth plate L and work clamp *a*, is fitted with a projection d^2, adjustable on its periphery according to the length of buttonhole desired, and adapted to engage with a stop f^2. This stop is formed on an elbow lever f^1 connected with the starting-lever F, so that, when the machine is started, the stop f^2 is moved out of the path of the projection d^2. In operation, the parts are first adjusted so that the slit can be cut by the knife E and coacting anvil (not shown). The wheel M is then turned by hand, by the ratchet lever I for instance, until the projection d^2 touches the stop f^2. The parts are then in such a position that, on the machine being now started, a buttonhole of the desired length is sewn. The machine is automatically stopped by the engagement of a cam c^1, adjustable on the wheel M, with the lever K connected with the stopping and starting mechanism.

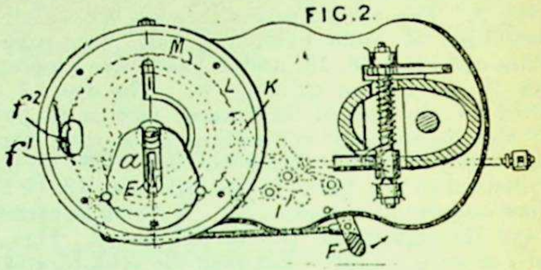


FIG.2

16,370. **Hunt, C. B.,** and **Ainley, H. F.** Sept. 14.

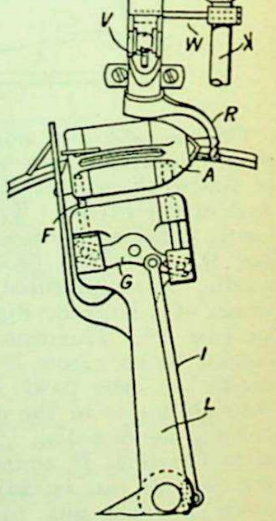
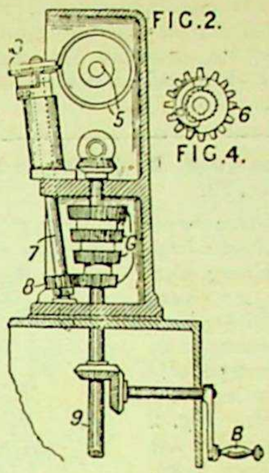


FIG.I.

Lock-stitch shuttle sewing-machines.—Relates to two-reel machines. The reel carrier or shuttle A is moved by pins F alternately engaging holes in it. These pins are actuated by a lever G pivoted to an oscillating lever L and also to a link I, one end of which is pivoted to the base-plate. The loops are spread for the passage of the shuttle by a hook R, having a forked beak, and oscillated through a ball joint V link W and shaft X from a cam on the shaft from which the lever L is oscillated. In a modification the shuttle A moves in a straight path, and the lever G is oscillated by the engagement of a projection on it in an inclined slot.

16,869. Morton. W. U., and **Morton, J. R. U.** Sept. 22.

Eyelet-hole sewing-machines; hooks and eyes, attaching; overedge-stitching machines.—Consists of improvements in the machine described in Specification No. 13,775, A.D. 1891, and has for object to adapt this machine for sewing hooks and eyes on to sails, tarpaulins, &c., and to allow of the needle being turned back by hand to the starting-point in the event of the thread breaking. The toothed wheel 6, through which the needle-bar is rotated from the shaft 5, is connected with its shaft 7 through a pawl and ratchet, Fig. 4, so that it does not rotate when the needle-bar is rotated in the reverse direction by the handle B. The pinion 8 may be set to gear with one or other of the wheels G on the shaft 9, to suit hooks or eyes of different sizes. The hook or eye holder is adjustable vertically and laterally.



17,266. Ophoven, A. van, and **Heuvel, M. van den.** Sept. 28.

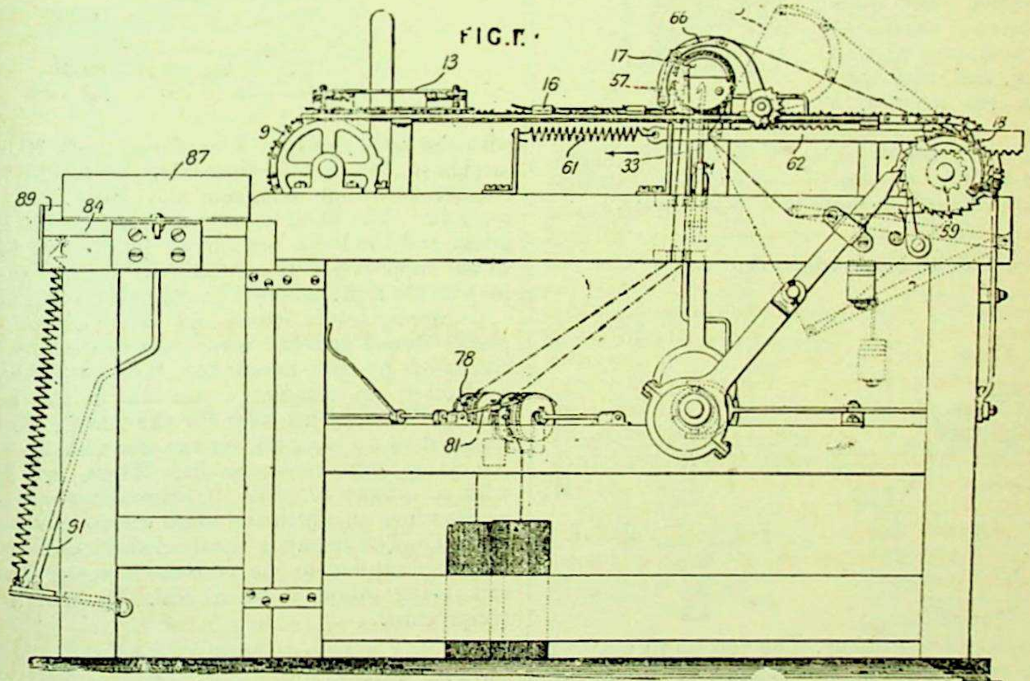


FIG.5.

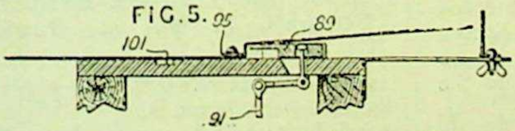
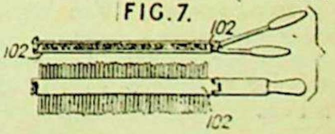


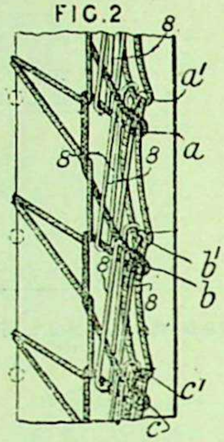
FIG.7.



Straw-casing sewing-machines; chain-stitching machines; feed; guiding materials; thread cutters; thread end holders; governing needle thread.—Straws are laid across the table 84 with one end abutting against the plate 87, a bar 95, Fig. 5, is laid across them, and the sliding block 89 is moved by the treadle 91 over the bar so as to bend the straws around it. One jaw 102 of a pair of tongs, Fig. 7, is passed through the slot 101 in the table beneath the straws, and the other is closed over them; the bar 95 is removed, and the straws are placed beneath a frame 13 on to the endless chains 9, and the tongs disengaged. The chain feeds the straws forwards under a spring presser 16 to a cylinder 17, around which they pass, being guided by endless travelling ropes 75, carried on arms 66, which are gradually brought from the position shown in dotted lines to that shown in full lines by a rack 62 moved by a broken pinion 59 and by a spring 61. As the straws pass around the cylinders, they are stitched by one or more reciprocating latch needles 33, until the two ends of the straw casing overlap, when the thread is automatically cut and its end seized. The sewing and thread-cutting mechanisms are periodically put into gear by the cam 18. The tension on the threads 57 is controlled by friction brakes 78, 81.

17,322. Chauvet, J. J. M., and Coulter, J. W. Sept. 29.

FIG. 2



Overedge stitches; seams; lock-stitches; double-loop-stitching machines; overedge-stitching machines; hat-sewing machines; binding edges.—Consists of an improved seam especially adapted for binding sweat leathers in hats. Fig. 2 shows an underside view with the stitches loose. a, a^1, b, b^1, c, c^1 are the loops left behind after successive ascents of the two needles. The loops a^1, b^1 &c. are enchained as in ordinary chain stitching, and also pass through the loops a, b &c. 8 is an underlocking-thread, each loop of which passes through a loop of each of the upper threads and round a loop of one of these threads. A locked double-loop stitch is thus produced.

17,355. Schoeneweiss, A. Oct. 1.

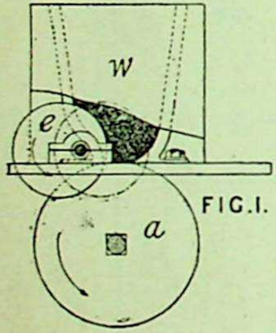


FIG. I.

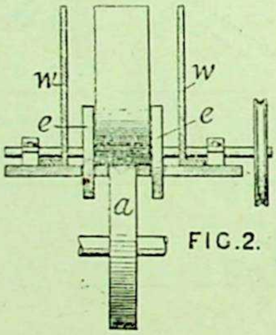


FIG. 2.

Sewing-needles, grinding. The needles are charged into a box w, through the bottom of which the grinding-wheel a projects. The box is provided with rotating eccentrics e, a lever, endless apron, or other device for changing the positions of the needles in order to subject each of them to the grinding action.

17,909. Klemm, H. A. Oct. 9.

Overedge-stitching machines; double-loop-stitching machines.—The work is horizontal and the needle vertical, and the machine is of the kind in which the needle loops are carried up over the edge of the work by a hook to be passed through by a second thread. The hook shaft p, Fig. 3, is carried in a support s, q, which is rocked about the pivot r to move the hook m forwards and backwards under the work by means of an eccentric w, rod v, ball joint u, and arm t. The shaft p is oscillated by a toothed segment y, pivoted on the support, and actuated by a second eccentric on a shaft parallel with the main shaft e. The looper shaft 10, shown in plan in Fig. 4, is reciprocated by a cam having a short throw and engaging the short arm of the lever 12. The hook has a shoulder just behind its point, and the loops are spread by an arm 44 fixed to the support q. The needle thread is caused to loop on the right side by a guard behind the needle.

FIG. 9.

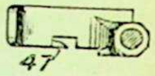


FIG. 3.

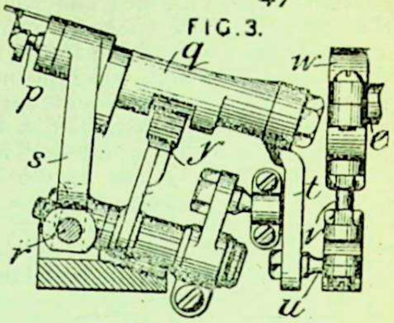
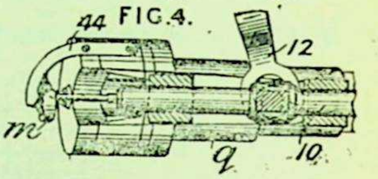


FIG. 4.



Governing needle thread and under thread.—The needle-thread take-up lever is actuated by a disc oscillated by the needle-bar lever and having a projecting pin engaging a cam slot in the take-up lever. The take-up lever for the looper thread is actuated by an eccentric on the main shaft.

Presser-feet; work-supports.—These are formed with a tongue 47, Fig. 9 showing that on the presser-foot on which the loops are formed.

Feed.—The feed-dog is raised and lowered by an eccentric on which one end of it rests, its other end being coupled to a link by which it is reciprocated.

18,003. Barrington-Brider, J. H. E., Pollock, J. W., and Cooksley, A. J. Oct. 10.

FIG. I.

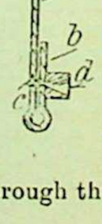
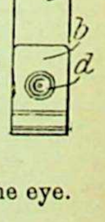


FIG. 2.



Needle-threaders.—The needle is held by a spring clip b, formed by bending the plate a, in a V-groove c extending half-way across the plate, and the thread is then inserted through a guide d. For threading darning-needles, the wool is held in the fork e at the end of the plate a and the fork and wool then pushed through the eye.

18,216. Webb, W. D., and **Alexander, A. H.** Oct. 13.

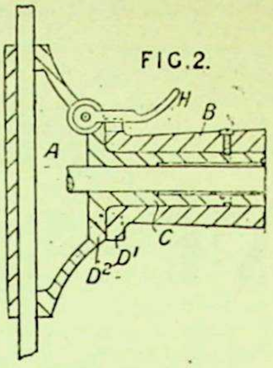


FIG. 2.

Sewing - machine frames.—The head A carrying the needle-bar is pivoted to the arm B by means of the sleeve C and flanges D^1, D^2, so that the needle-bar can be turned into various angular positions to facilitate removal of the needle &c. A catch H engaging notches in the flange D^1 holds the head in the desired position.

18,290. Küstner, F., and **Loog, H.** Oct. 13.

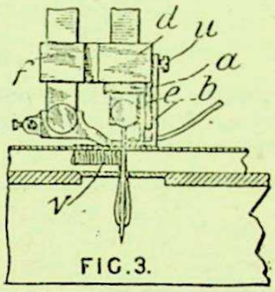


FIG. 3.

Ornamental sewing-machines; tufting machines; embroidery.—Consists of a sewing-machine attachment for producducing pile embroidery in any desired pattern. A sleeve *a* fixed to the needle-bar carries a depending U plate *b*, in which engages a plate *e* secured to a sleeve *d* embracing the sleeve *a*, and attached to a sleeve *f* which slides on the presser-bar under the friction of a spring. The wool &c. is threaded through two holes in the bottom of the U. Relative motion between the sleeves *a* and *d* is limited by the screw *u* in one direction, and the plate *e* and the bottom of the U plate *b* in the other. In operation, the thread is clamped between the plates *e* and *b* a sufficient time after the beginning of the up-stroke to leave a loop *v* below the work. The presser-foot is preferably made in two parts, adjustable to or from each other, and the work is carried on a tambour frame movable by hand.

18,711. Thompson, W. P., [*Funken, J.*]. Oct. 19.

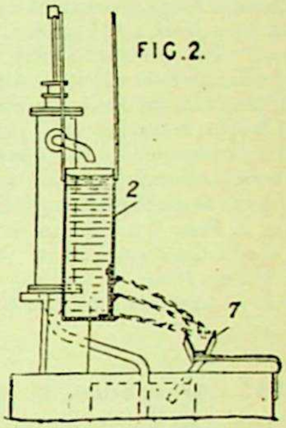


FIG. 2.

Sewing - needles; sewing - machine needles.—In order to prevent their distortion by tempering, needles are cooled less suddenly than usual. This is effected by passing them through heated oil before they drop into the tempering-bath. The heated oil flows in sheets from slots in a vessel 2, to which it is previously raised from the heater by a pump. The oil is returned by a trough 7 to the heater.

18,778. Colman, H. D. Oct. 20.

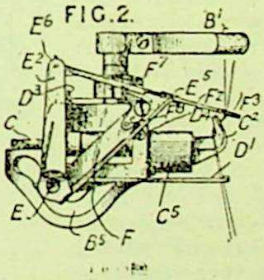


FIG. 2.

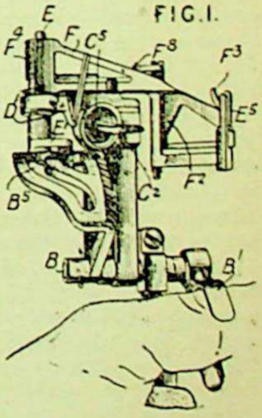


FIG. 1.

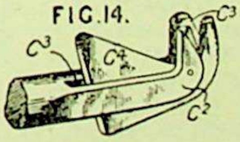


FIG. 14.

Tying or knotting. — Consists of a device for tying spoolers' and other knots, adapted to be carried on the hand and operated by a simple movement of the thumb or finger. A shaft B, mounted in a frame which can be strapped to the hand, and oscillated by a thumb-lever B^1, carries a segment formed with skew teeth and with a cam-groove B^5. The teeth engage a pinion on a shaft C carrying the knotting-hook C^2, which is thus rotated, while the cam B^5 by means of an arm E^1 oscillates a shaft E carrying the thread-gripping and knot-stripping devices. In a slot C^3 of the hook C^2, Fig. 14, is pivoted a lever C^4 formed with thread clamping and cutting edges, and actuated by the engagement of its tail with the fixed eccentric sleeve C^5. On the shaft E are a fixed arm E^2, and a loose arm F normally separated from the fixed arm by a spring F^4. A downwardly-inclined extension F^2 of the arm F slides between prongs E^5 connected with the arm E^2 so as to clamp the threads between the prongs E^5 and a thickened part F^3 of the extension F^2. Pivoted on the arm F is a latch lever F^7, adapted to engage a pin E^6 on the arm E^2, and carrying a pin F^8 which projects through a short slot in the arm F. In operation, the two threads are laid across the extension F^2, the hook C^2, and the guide D^1. On then moving the lever B^1, the threads are twisted together to form the knot. At the same time the arm E^2 moves towards the arm F, which is prevented from movement by a stop D^4. The parts E^5, F^3 thus engage and clamp the thread, and are so held by the latch F^7 and pin E^6. The arms E^2 and F then retire to pull the knot tight and remove it from the hook. On the contact of the pin F^8 with a stop D^3, the latch F^7 is first released, and on the further movement of the arm E^2 the parts E^5, F^3 are disengaged, releasing the threads and allowing the arm F to spring back to its normal position. In a modification, the thread gripper is dispensed with, and the friction of the thread in the thread-pulling lever is relied on to tighten the knot and pull it off the hook. The cam-groove B^5 is correspondingly modified.

19,423. Klemm, H. A. Oct. 30.

Overedge-stitching machines ; double-loop-stitching machines.—The work is horizontal and the needle vertical, and the machine is of the kind in which the needle loops are carried up over the edge of the work by a hook to be passed through by a second thread. Fig. 2 shows a plan. The hook *t* carries the under thread, and rotates parallel with the feed and on an axis inclined upwards towards the needle. The looper *x* reciprocates parallel with the hook shaft. In operation, the hook engages a loop of the needle thread under the work, and carries it up, where the hook thread is pushed into a loop by the looper *x*, Figs. 8 and 9, this loop being wide so that the needle does not miss it. A spur *o* prevents the needle loop from passing too far on to the hook. The hook shaft is oscillated by an eccentric *n*, rock shaft 11, and toothed segment 10 ; the looper is reciprocated by a cam 8 on the lower shaft.

Feed ; trimming or cutting.—The feed-lever is moved vertically by an eccentric and horizontally by another eccentric through a slotted link connection. This second eccentric may also serve to operate a trimming-cutter.

FIG. 2.

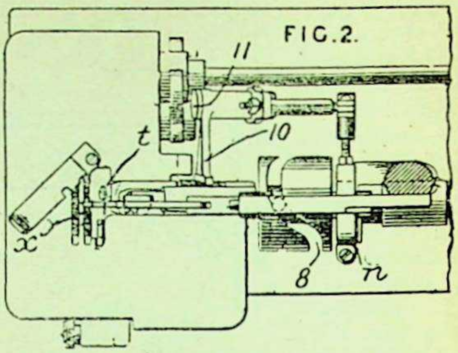


FIG. 9.

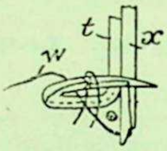
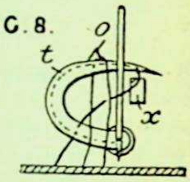


FIG. 8.



19,556. Dearborn, C. A. Nov. 1.

Blind-stitching machines ; chain-stitching and overedge-stitching machines.—Consists of improvements in machines of the kind described in Specification No. 12,868, A.D. 1899, and adapted for seaming the lower edges of trouser legs, skirts, and the like. Fig. 2 shows a part side view of the machine. The looper shaft 25, which, as before, is operated by an inclined crank-pin, is supported near the looper end by a link 30 pivoted at 31 and connected to it by a ball-and-socket joint 38. The pin 31 is eccentric to its support 32, and is adjusted by turning the support.

Feed ; presser-wheels ; work-supports ; presser-feet.—Upper as well as lower feed-devices are provided. The latter are carried in a frame 70 pivoted at 72 and under control of a spring 70ᶜ. The main feed-wheel is in two parts, namely the wheel 77, Figs. 8 and 11, and the wheel 76 of larger diameter for forming the fold in the material. An auxiliary feed-wheel 101, 100 is moved in unison with the main feed by gearing 90, 91, but is capable of independent movement to or from the work, the bearing carrying its shaft 92 being pivoted at 97 to the frame 70, and pressed upwards by a spring 99. The part 101 is conical and approximately parallel to the adjacent part of needle path, and the part 100 is cylindrical. The upper feed-device comprises a reciprocating arm 110 serrated at its end and having attached to it a spring finger 112 adapted to hold the material down on the wheel 76, and bent at the end to form a passage for the needle. Both upper and lower feed-devices are operated from a frame 85 pivoted on the shaft 72, the lower feed through a friction ratchet. The frame 85 is operated from an eccentric adjustable on the main shaft. The rigid presser or work-support 9 has a longitudinal groove to correspond with the wheel 76, and two openings 9ᵇ, 9ᶜ parallel therewith

FIG. 2.

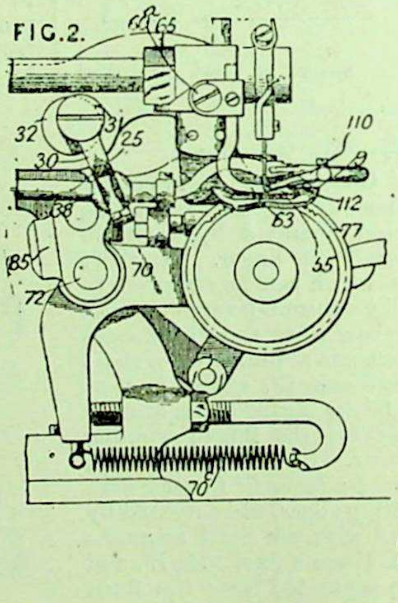


FIG. 8.

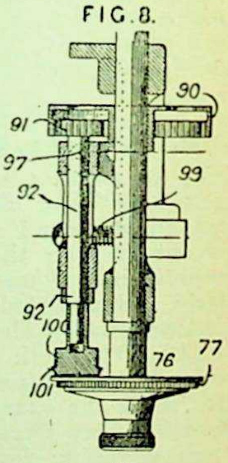


FIG. 11.

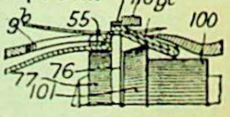
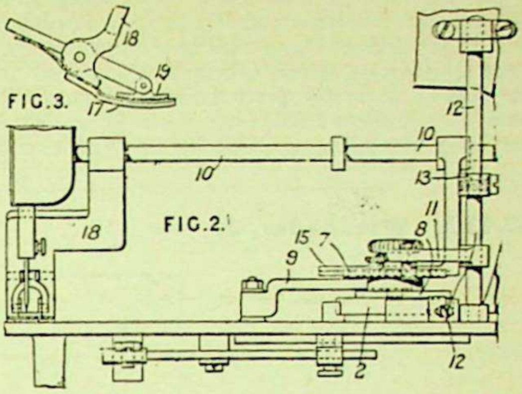


Fig. 11. In the opening 9^c is arranged a spring 55, supported at both ends and adapted to yield slightly upwards.

Needle shields.—To allow of using a shorter needle, a needle guide 63, adapted to move out of the way of the needle when necessary, is provided. It is under the control of a cam 65 on the needle shaft and a spring coiled round its pivot 60^a. The bend in the finger 112 described above also serves as a needle guide.

19,851. Hunt, C. B., and **Ainley, H. F.** Nov. 5.

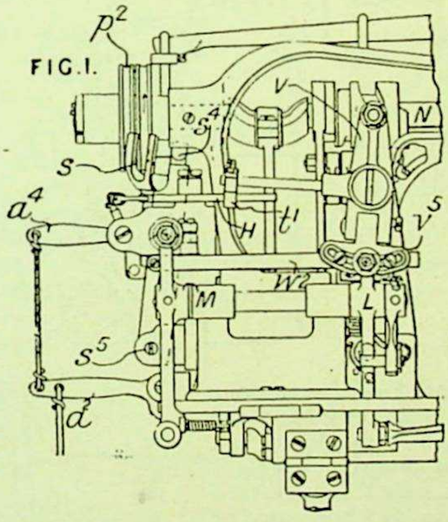
Buttonhole-sewing machines.—Relates to the production of buttonholes such as are used in low-grade work. The cloth is held in a clamp carried on an arm 18 of a shaft 10, and comprising a fixed part 17 and a skeleton spring jaw 19. Cams 7, 8, secured to a ratchet or friction feed-wheel 2, communicate to the shaft 10 a rocking and longitudinal motion respectively, the former being transmitted through a lever 9 and arm 15, and the latter through an arm 11, shaft 12, and arm 13. Adjustable pin-and-slot connections are provided. The Provisional Specification states that means may be provided operated from the stop-motion to positively place the cams in starting position on the completion of a buttonhole.



20,114. Browne, R. G. M. Nov. 8.

Sewing-machines, driving.—Consists in driving a sewing-machine by means of a spring, weight, or other motive force. The spring &c. drives the machine through gearing and a balance-wheel such as used in clocks &c. The necessary means for regulating the speed &c. are fitted.

20,414. Macdonald, J. K., [*Sullivan, J. J.*]. Nov. 13.



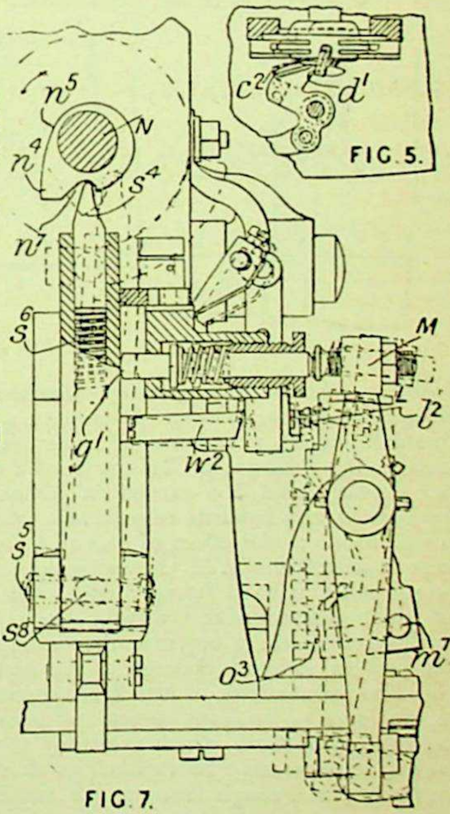
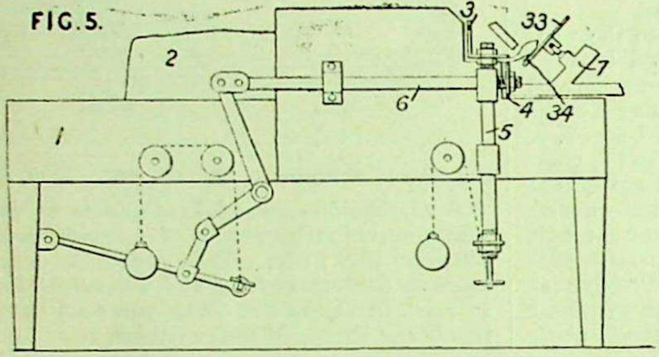


FIG.7.

Sewing-machine thread cutters; stopping-gear; stopping, automatic.—Consists of means for stopping the machine and automatically cutting the thread. Fig. 1 shows a side view, and Fig. 7 an enlarged left-hand end view. The belt fork s, pivoted at s^5, is held in the position shown during the operation of the machine by a treadle-actuated elbow-lever a^4, against the action of a spring which tends to make it throw the belt on to the loose pulley p^2. On the release of the treadle, the fork throws the belt over when the lowest part n^5 of a cam on the needle shaft N comes opposite a projection s^4 of the belt fork. This projection then engages the periphery of the cam, and is depressed against the spring s^6 until it ultimately snaps into the hollow n^7. The release of the fork is also controlled by a detent H, which is periodically disengaged from it by a wiper t^1 carried by a vibrator V operated by a cam on the shaft N. The cutting-device, Fig. 5, comprises a horn d^1 and blades c^2. It is moved in two stages, in the first of which the horn enters the thread loop to pull out thread, while in the second the blades cut the thread. The cutter is operated from the lever L, to which the first movement just referred to is imparted by the following means:—The vibrator V carries a hinged tail v^5, which normally passes clear of a projection l^2 on the lever L. When the fork s is released, as described above, a wedge-block carried by a rod w^2 connected to the fork forces the tail v^5 outwards, and so moves the lever L into the position shown in dotted lines. This first movement is limited by a stop o^3. The second movement of the lever L is obtained from a wiper n^4 on the shaft N, Fig. 7. The belt fork is pivoted at s^8, as well as s^5, and can therefore be moved by the wiper n^4 to the right against a spring stop g^1, which transmits the motion to a lever M. This movement of the lever M disengages the stop o^3 from the lever L, and, by means of a pin m^7, imparts the final cutting movement to the lever L. A detent holds the lever M in the position to which it is thus brought, until released by the lever a^2 on the machine being again started.

20,419. Wiesbader, J. Nov. 13.

FIG.5.



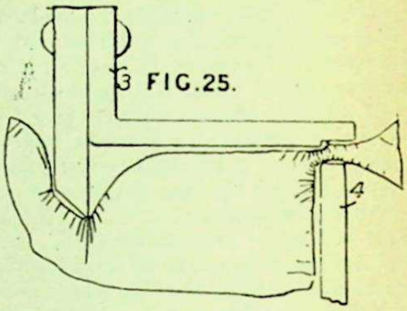


FIG.25.

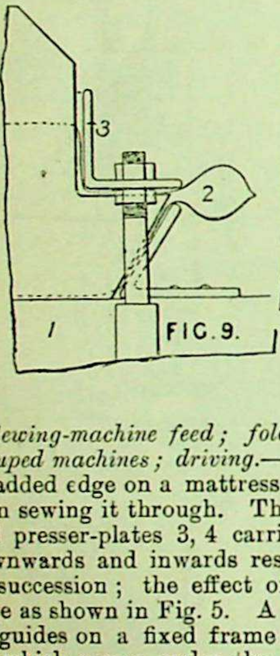


FIG.9.

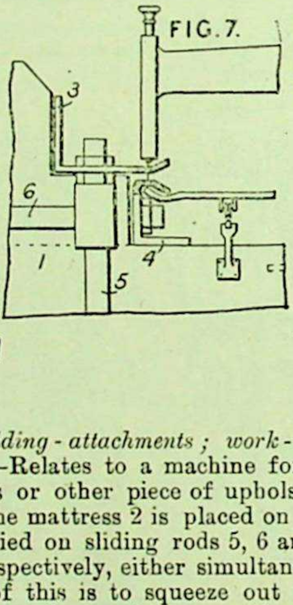


FIG.7.

FIG.14.

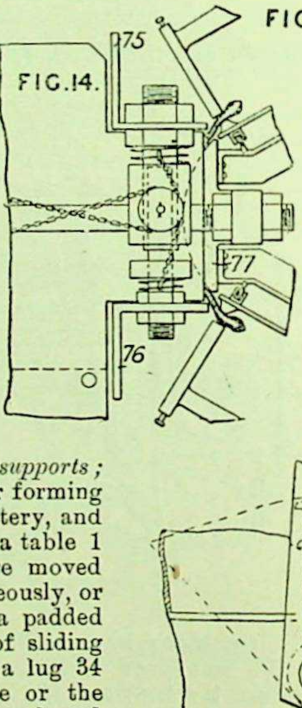


FIG.26.

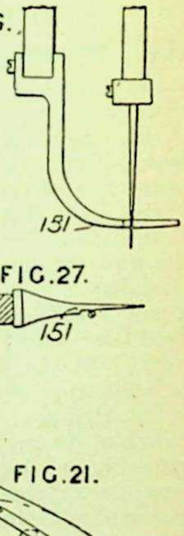


FIG.27.

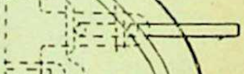
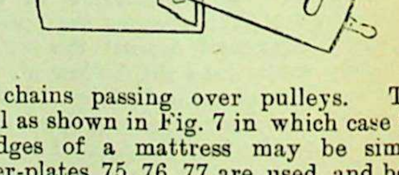
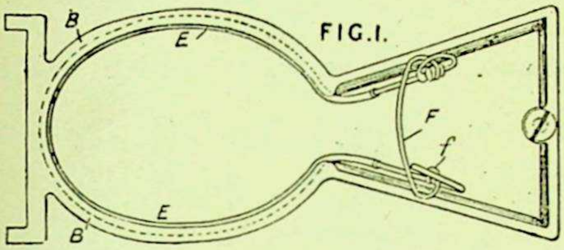


FIG.21.



Sewing-machine feed; folding-attachments; work-supports; grouped machines; driving.—Relates to a machine for forming a padded edge on a mattress or other piece of upholstery, and then sewing it through. The mattress 2 is placed on a table 1 and presser-plates 3, 4 carried on sliding rods 5, 6 are moved downwards and inwards respectively, either simultaneously, or in succession; the effect of this is to squeeze out a padded edge as shown in Fig. 5. A sewing-machine capable of sliding on guides on a fixed frame 7 has a stitch plate 33, a lug 34 on which comes under the pad; the sewing-machine or the mattress (or both, in opposite directions) is now traversed, and the pad is stitched through at the neck just above the lug 34. The presser-bars, of the form shown in Figs. 5, 9, 7, and 25, are operated by links, levers, and treadles, separately, or by the same treadle, in which case they are connected by cords or chains passing over pulleys. The sewing machine may be inclined as shown in Fig. 5 or horizontal as shown in Fig. 7 in which case the needle works through slots in the presser plates 3, 4. Both edges of a mattress may be simultaneously treated, as shown in Fig. 14, in which case three presser-plates 75, 76, 77 are used, and both sewing-machines are driven from the same shaft by bevel gearing. The sewing-machine is traversed on guides by means of a rotating one-toothed wheel and a fixed toothed rack having teeth on both edges; the one-toothed wheel acts first to remove a detent which engages the underside of the rack, and then to engage a top tooth and so move the sewing-machine. The detent can be disengaged by hand to bring back the sewing-machine. In a modification, the machine is traversed by means of a rocking-pawl, operated from the shuttle shaft, which engages a toothed rack having teeth on one edge only; a projection on the shuttle shaft engages a forked tail of the rocking pawl lever, while another projection acts on a spring-actuated detent and raises it before the pawl comes into play. In another modification, the machine is traversed by a worm having threads inclined in one half of the circumference at right-angles to the axis in the other half. The presser-plates may be operated by a pair of sectors having cam slots with which engage pins on the presser rods as shown in Fig. 21; a concentrated part of the slot keeps the pressure-plates in position during the sewing. Figs. 26, 27 show a pressure-foot 151 for the sewing-machine. The sewing-machine may be driven by an electromotor on the needle shaft, the casing being secured to the frame of the sewing-machine.

20,495. Henderson, J. Nov. 14.



Embroidery.—Consists of a frame for holding handkerchiefs, serviettes, towels, &c. in embroidery machines, for embroidering monograms &c. thereon. The material is held between a spring E covered with rubber &c. and a frame B fixed to the machine and grooved at B^1. The free end of the spring are turned up so that they can be drawn together when the spring is inserted or removed. A rod F, hooked at *f*, keeps the spring expanded when in use.

FIG 3a

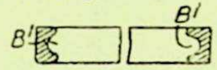
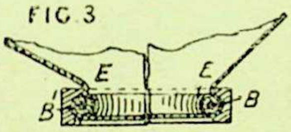
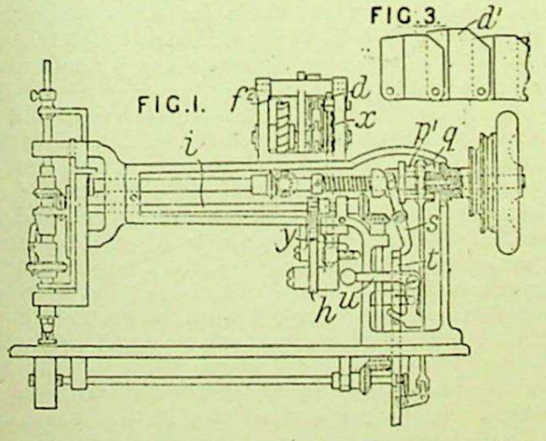


FIG 3



21,102. Köhler, J. Nov. 22.



Embroidery.—Relates to tambouring machines, and consists of improved means for automatically turning the needle, feed-device, &c. to follow the pattern. For this purpose, a moving pattern *d*, having links *d*^{1}, Fig. 3, the depth of which varies according to the design, engages a lever connected by gearing, such as a toothed segment *h*, with the shaft *i* geared in a usual way with the needle-bar &c. The chain is driven by worm gearing f^2 so that each link corresponds to a stitch. To stop the machine on the completion of the pattern, a projection on the chain is adapted to engage a lever, and so depress the rod *x*, *y* aud move the elbow lever *u* so as to allow the treadle rod *t* to spring upwards into a position to act as an abutment to the lever *s*, and cause it to disengage the clutch *p*^{1}, *q*.

21,774. Bartleet, E. R. S. Dec. 1.

FIG.I.

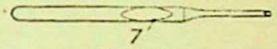
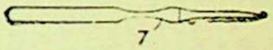


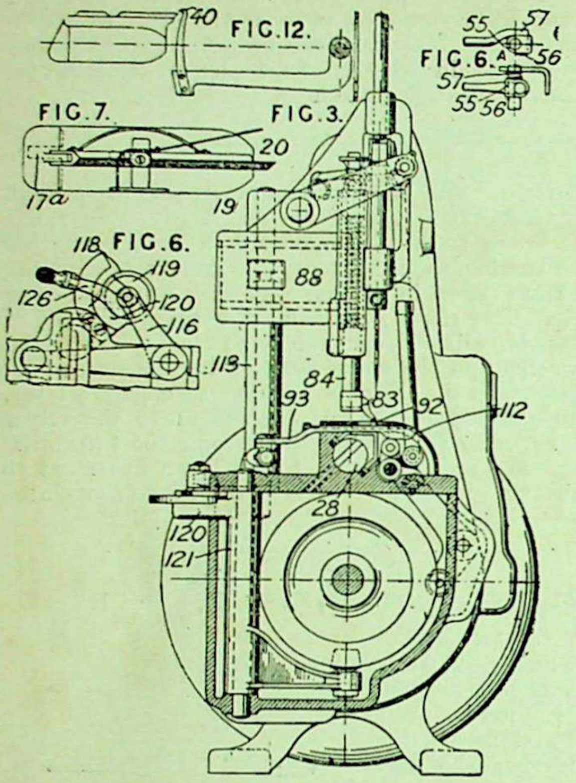
FIG.2.



Crochet-hooks.—The finger flats 7 are produced by grinding instead of by stamping, thus leaving the body part with a parallel exterior on which the sheath easily fits. Indentations may be formed in the sheath or holder to limit the distance of insertion of the hook.

21,833. Pearson, M. H. Dec. 3.

Boot-sole stitching-machines; leather-sewing machines; marking-attachments; governing needle thread and under thread; feed.—After the stitch &c. has been pricked up and the leather &c. thereby compressed, the thread is further and finally tightened. and the pricking-up tools then engage the work a second time to feed it. These features are described in connection with a special machine, but they are of wider application. The upper pricking-up tool 83 is carried on a bar 84 and guided in the guide 88 and normally depressed by a spring, and raised by a clamp similar to that of the presser-bar described below. The lower tool 92, for which a feed-plate may, if desired, be substituted, is carried on a plate 93 which is raised by a roller 112 on the elbow lever through which the upper tool is raised Both tools are moved laterally to feed the work, from a vertical shaft 113 adjustably oscillated by the device shown in plan in Fig. 6. The cam-oscillated arm 120 carries a block 119, which can be set in any desired position by means of a handle 126. The block 119 is formed with a slot 118 engaging a block on the arm 116 of the shaft 113 and curved to a radius equal to the distance of its centre line from the centre of the shaft 121.



Lock-stitch shuttles and shuttle mechanism.—The needle loop is pulled down for the passage of the shuttle by a hook 40, Fig. 12. The shuttle, shown in elevation in Fig. 12 and in plan in Fig. 7, has a rib 19, part of the front end of which is cut away at 20 to leave room for the hook, a hollow 17^a, and a slot in the front end of the driver 28, Fig. 3, being also provided for the same purpose.

Presser lifted automatically.—On the upper end of the presser-bar slides a sleeve 55, Fig. 6^a, in which is pivoted a pin 56 cut away to clear the presser-bar and having an arm 57 embraced by the forked end of a cam lever, which can thus raise the presser-bar against its spring, and also lock it when down against the work.

21,992. Lake, H. H., [*Steam Heated Horn Co.*]. Dec. 4

Boot-sole stitching-machines; governing under thread; work-supports; needles, hook, threading-devices for.—In a horn having a whirl *b* rotated either directly or through a pinion *e* from the shaft *c*, the thread is guided through the hollow shaft *c*, and through a central hole in the pinion on the end of the shaft. The shaft and whirl are located entirely within the horn, so that there is no possibility of the thread being abraded by a shoe placed on the horn. The needle orifice in the whirl has parallel walls, the side nearest the thread-eye b^1, Fig. 5, conforming approximately to the curvature of the needle point.

FIG.1.

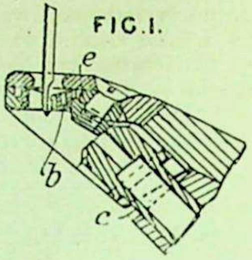
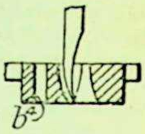


FIG.5.



22,296. Lake, H. H., [*Noble, D.*]. Dec. 7.

FIG.4.

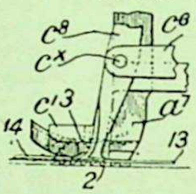


FIG.7.

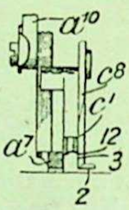
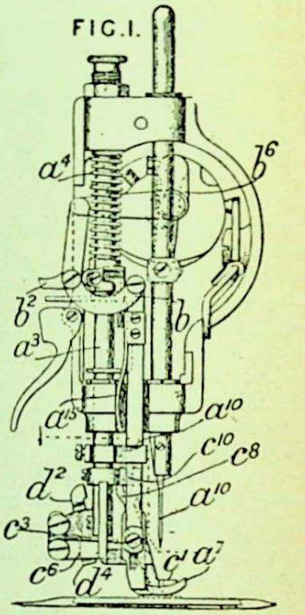


FIG.1.



Sewing-machines, trimming or cutting in; presser-feet; presser lifted automatically.—Relates to machines in which an upper ply of fabric is cut to a pattern while being stitched on to a lower ply, thus producing appliqué work, and is an improvement on the device described in Specification No. 16,462, A.D. 1898. A two-part presser-foot is employed, one part being the "walking-foot" a^7, and the other, which has a vertical movement only and is formed with the cutting-blade 12, Fig. 7, being the extension c^1 of a bracket c^3 on the lower end of the presser-bar a^3. Pivoted on a bracket b^2 on the presser-bar a^3 is an elbow lever *b*, one end of which is connected to a crank b^6 on the upper shaft, while to the other is pivoted a bar a^{10} carrying the walking-foot a^7. The edge 3, with which the cutting-edge 12 co-operates, is formed on a blade c^8 guided at its upper end by a pin c^{10} on the presser-bar and pivoted at $c^\times$ to a lever c^6 pivoted to the bracket c^3 and pressed downwards by a spring. The lower end of the blade c^8 has a toe to pass between the two plies of fabric 13, 14, and a flat part 2 to rest on the lower ply. In operation, the upward motion of the feed-dog at the beginning of the feed raises the walking-foot a^7

and through it the presser-bar and foot c^1, thus separating the cutting-blades. On the completion of the feed, the lever b is moved so as to allow the spring a^4 to depress the presser-bar and foot c^1, and thus make a cut in the upper ply, which is then clamped by the flat part of the foot, the under ply being clamped by the foot 2. The further motion of the lever b then raises the walking-foot, which is returned to its initial position by the spring a^{15}. The lowest position of the foot 2 is determined by an adjustable stop and lever d^2 abutting against it and having its lower end d^4 bent under the lever c^6. By turning the lever d^2 away from the stop into contact with another stop, the cutter is thrown out of action.

22,528. Macdonald, J. K., [*Singer Manufacturing Co.*]. Dec. 11.

FIG. 3.

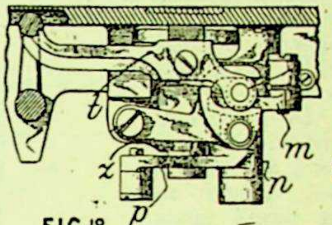


FIG. 4.

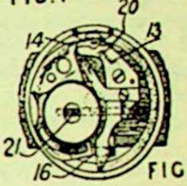


FIG. 24.

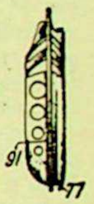


FIG. 18.

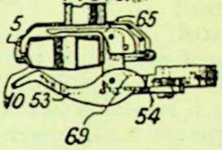


FIG. 34.

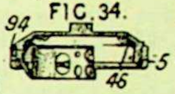


FIG. 28.

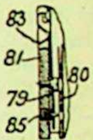


FIG. 36.

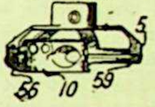


FIG. 38.

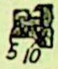


FIG. 39.

Lock-stitch hook sewing-machines.—A thread case 10 is peripherally supported, by means of a rib and groove connection, within and eccentric to a horizontal oscillating hook-ring 5. The thread case is prevented from rotation by a holder 13. The hook shaft is oscillated from an arm p, Fig. 3, of a vertical shaft n, another arm m of which is connected to an arm of a vertical shaft operated from the driving-shaft. 20 is an arm which assists in guiding the loop during the take-up, 14 is the loop-dividing beak of the thread case, 21 a bobbin ejecting lever, and 16 a spring pin for cushioning the contact of the heel of the thread case with the holder 13. Fig. 18 shows a sectional plan of a somewhat similar hook-ring 5 and thread case 10 vertically disposed. The bobbin is retained in the thread case by a lever 53, which is held in the position shown by a spring latch 54. On releasing the latch, the lever can be pulled outwards, and towards the end of its movement its tail 69 engages a bobbin-ejecting lever 65. The connection between the thread case and hook ring is by means of a rib 91, Fig. 24, on the thread case engaging a groove in the hook ring. Towards the heel of the thread case there is a second rib 77, forming with the rib 91 a groove through which the loop-taking hook passes, thereby preventing entanglement of the loop. In another modification, in which the hook shaft is driven by crank and pitman connection with the driving-shaft, and therefore revolves continuously, the thread case has an interlocking or dovetail connection with the hook ring, a radial support for it being thus unnecessary. Fig. 34 shows one form of this connection. A rib 94 on the thread case, of L-section, engages a groove formed between the hook ring 5 and the ring 46 on which it is detachably secured. Figs. 38 and 39 show similar connections, and Fig. 36 one in which the part 56 of the thread case is detachable and has a rib engaging a groove 59 in the hook ring.

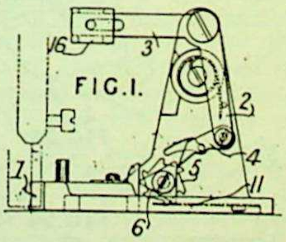
Feed.—In the modification first described, the vertical movements of the feed-bar t are obtained from a lever z operated by a cam on the shaft n.

Governing under thread.—In the case of the vertical oscillating hook, the under-thread tension consists of a spring 79, Fig. 28, bearing against the inner side of one of two flanges 80, 81 between which it is placed. The spring is adjustable by means of a screw 85. 83 is a threading-slot in the flange 81.

22,768. Moore, J. C. Dec. 13.

Blind-stitching machines; overedge stitching machines.—Consists of improvements in the attachment described in Specification No. 24,596, A.D. 1897. The pusher-block 1 is now made with a working face of such a shape, such as the concave shape shown, that it turns up the edge of the fabric instead of pushing it back. The pusher-block is operated through a lever 2 and pawl 4 which acts directly on the ratchet-wheel 5 carrying the three-cornered cam 6. Backward rotation of the ratchet-wheel is prevented by a spring detent 11. In order to make the attachment adaptable to a greater variety of machines, the set-screw hole of the striking-block 16 is at different distances from each of the four sides, but central to the channels adapted to embrace the arm 3 of the lever.

FIG. 1.



22,882. Denne, M. T., Cave, A., Cave, A., and **Cave, F.** Dec. 14.

FIG. 13.

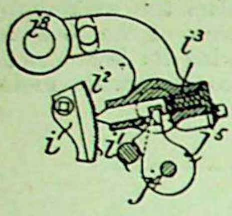


FIG. 20.

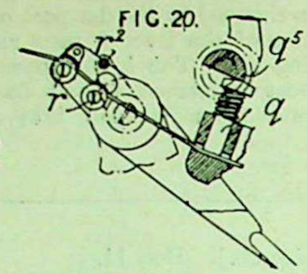


FIG. 5.

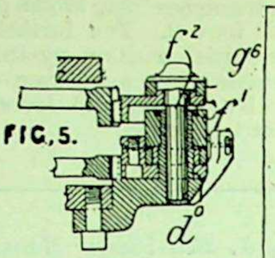


FIG. 8.

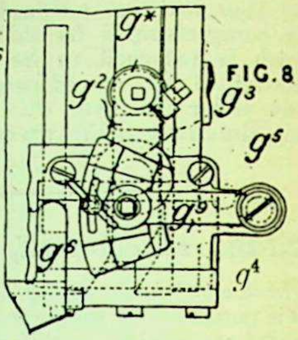


FIG. 14.

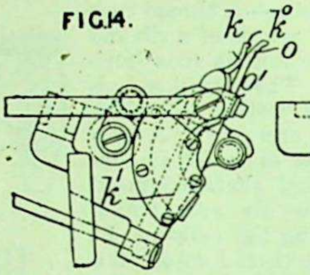
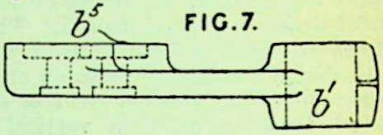


FIG. 7.



Boot-sole stitching-machines; needles, hook, threading-devices for.—Consists of improvements in the machines described in Specifications Nos. 10,025 and 10,026, A.D. 1892. The needle hook is on the side of the circular needle away from the completed stitches, and the needle is threaded by means of a looper k and hook o, Fig. 14. The looper, through an eye k^0 in which the thread passes vertically from the work, is carried on a shaft k^1, which is oscillated through a crank and universal joint connection in order to traverse the looper across the path of the needle. The hook o is carried by a segmental slide o^1, which is moved in semicircular guides.

Feed.—The awl segment f^1, Fig. 5, is secured to a stud f^2 having a long-bearing in the tubular support d^0, which carries the needle segment and presser-foot. The feed-motion of the awl is obtained from a cam lever g^2, Fig. 8, pivoted at g^3 and connected by an adjustable block g^9 to a slide block g^4 having an extension g^6 which embraces the end of the stud f^2. The cam roller g^0 is conical, and capable of adjustment into the tapered cam-groove in order to take up wear.

Frames.—The main cam shaft is mounted at each end in a bearing b^1 of a plate, Fig. 7, having recesses b^5 adapted to engage parts of the frame and secured thereto by bolts. The cam shaft can thus be easily removed.

Governing needle thread.—The thread for each stitch is pulled off in accordance with the thickness of the work by a pin r^2, Fig. 20, on an extension of the take-up lever adapted to engage the thread between two rollers r carried on the presser lever. The thread is locked during the pull-off by a pin q engaged by a part q^5 of a cam-actuated shaft.

Presser lifted automatically.—Mechanism for locking and lifting the presser comprises a lever linked to the presser and having teeth i^1, Fig. 13, engaged by a pawl i^3 carried in a rock shaft i^2 having an arm i^8 in engagement with a cam. The pawl is withdrawn by means of an arm j^5 and a pin j^4 carried by a second cam-actuated rock-shaft.

23,010. Dorman, W. H., and **Dorman & Co., W. H.** Dec. 17.

Knotted-stitch machines; feed; work-supports.—Relates to machines for stitching pamphlets &c., in which the stitch and knot are of the kind formed in the machine described in Specification No. 21,652, A.D. 1891. The pamphlet is carried into position beneath the needle by a slide b^3, Fig. 1, on to which it is laid by the operator. The slide has an adjustable stop b^1, and a gravity holding-down foot b^2 which, on the return of the slide, is raised to receive the next pamphlet by the engagement of the tail of the holding-down lever b^{11} with a fixed cam b^{14}. The finished pamphlet is removed from the machine by a gripper s^{14} sliding on a bar s^{12}, Figs. 11, 12. The gripper is opened as it approaches the pamphlet, by the engagement of the pin s^{19} with a cam s^{20}. On the return of the gripper the cam s^{20} rises, Fig. 12, to allow the pins s^{19} to pass. The gripper is opened by a cam s^{32} to release the pamphlet, which is discharged by

FIG. 11.

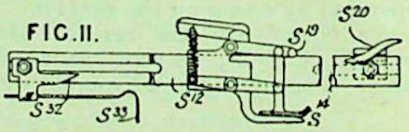


FIG. 12.

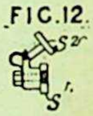


FIG. 1.

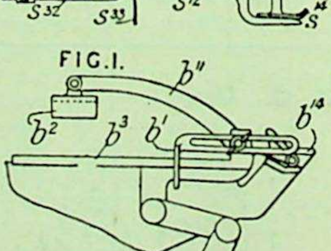


FIG. 20.

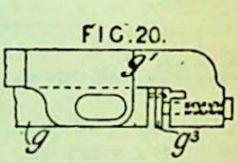


FIG. 18.

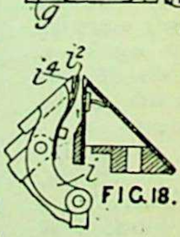


FIG. 23.

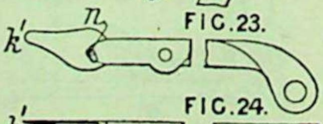
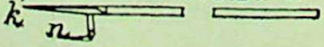


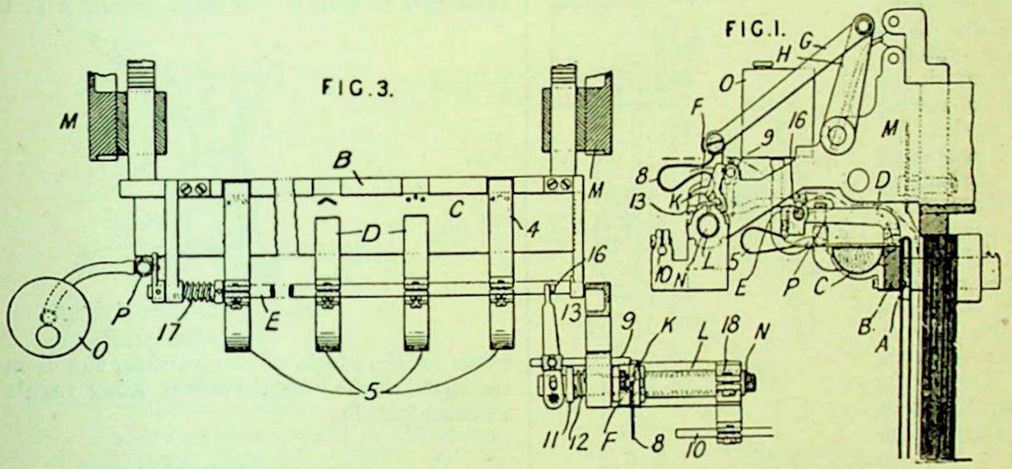
FIG. 24.



a stop s^{33}. The cams and stop are all adjustable. The feed-slide on which the pamphlet is carried driving the stitching and thread-cutting is moved during the stitching by a cam having an adjustable connection so that the length of stitch can be varied. The final movement of the feed-slide, however, before the threads are cut, is effected by a second cam, so that the length of loose end is invariable and independent of the adjustment of the first cam. The pamphlet is held on the slide by cam-actuated spring grippers. The partially-formed knot is entered by a finger k^1, Figs. 23 and 24, which holds it firmly against the pamphlet while the knot is drawn tight. The finger is shaped as shown, in order to put a certain tension on the needle thread, and is withdrawn just before the knot is completely tightened. Modifications necessary for a flat table machine are described.

Thread-cutters; thread-end holders; governing needle thread.—Upper thread grippers and cutters are carried on the presser-foot. The grippers comprise a pair of oppositely-moved bars g, g^1, Fig. 20, the bar g^1 carrying a spring-pressed gripping-surface g^3. The cutters, consist of a pair of scissor-like blades. The under thread cutters and gripper comprises a lever i carrying a knife i^4 and a gripper spring i^7, which coact with one face of the shuttle race. The thread cutters and holders are all operated from one cam. The under thread is placed in correct position with regard to the cutter and gripper by means of a pin n on the finger k^1, and by a notch on the outside of the shuttle race. To tighten the knot the following parts co-operate :—a take-up lever, a yieldingly supported thread truck, and a thread-lock comprising a U-spring.

23,122. Smyth, D. M. Dec. 18.

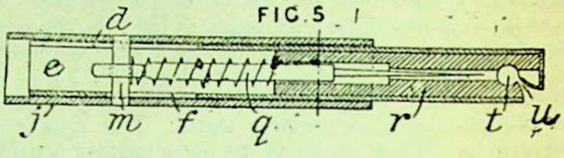


Book-stitching machines.—Relates to mechanism for gumming the threads after sewing in a book-stitching machine. During sewing, the signatures are supported by an arm A, and a pusher B is employed to push the signatures to the rear after sewing. A hollow holder C with perforations 4 in the top contains mucilage, paste, &c., and is connected to the pusher. The adhesive material is forced through the perforations, and is applied to the signature threads by means of sliding pushers D, actuated by suitable mechanism and preferably connected by springs 5 to arms on a rocking-shaft E. An arm F is connected by a link G to a rocking-arm H on a shaft carrying the thread-tightening devices, or other suitable mechanism is employed to swing the arm F each time the sewing of a signature is completed. A double-ended pawl K, controlled by a spring 8, is mounted on the arm F, and engages a ratchet-wheel secured to a sleeve L forming the nut for a screw N. Adjustable stops 9 and 10 are arranged to turn the pawl K, so as to reverse the direction of motion of the sleeve L at the proper time. The screw N has a collar 11, between which and the frame M of the machine a spring 12 is interposed, and the screw also carries a pin for operating a lever 13, the end of which comes into contact with a lug 16 on the shaft E. In operation, the sleeve L is turned until it is screwed up to the frame M, and then the screw N is moved endwise until the lever 13 is brought into contact with the lug 16, thereby operating the shaft E and causing the gummers D to uncover the holes 4 and allow the gum &c. to ooze out, after which the gummers are moved forward to apply the gum to each line of sewing or looping. By adjusting the width of the lug 16 and the position of the stop 9, the gum may be applied to as many signatures as required. When it is desired to miss gumming a signature, as in the division between two volumes, the parts are engaged so that the lever 13 is moved past the lug 16 operating the same, after which the pawl comes against the stop and the motion is reversed. The reverse motion continues until the pawl comes against the stop 10, which again reverses the pawl, and the process is again repeated. If the gum is to be applied to each signature, the link 6 is disconnected from the arm F, and the lever B placed in the path of the lug 16. The shaft E is returned to its normal position by a spring 17. A friction clamp 18 may be applied to the sleeve L to prevent looseness. The gum &c. is applied to the holder C from a reservoir O, and may be forced therein by a pump P, the plunger of which is operated from the shaft E or other part of the mechanism.

23,142. Lawrence, C., Maurer, C. H., and **Davidson, F. N.** Dec. 18.

Needle-threaders.—In the centre of a circular stand is fixed a tube *j*, in which a tube *e* can slide to an extent limited by slots *d*, *f*, engaging a pin *m* fixed across the tube *j*. The upper end of the tube *e* is closed by a block *r*, and in it are formed a hole *t* for the needle and a slot *u* by which the thread is passed into the hole *t* and under the eye of the needle. On the pin *m* are supported the threading-rod *q* and a spring by which the tube *e* is normally held raised. On depressing the tube *e*, the thread is forced through the needle eye by the rod *q*. The stand carries a thread-guide and a thread-cutter.

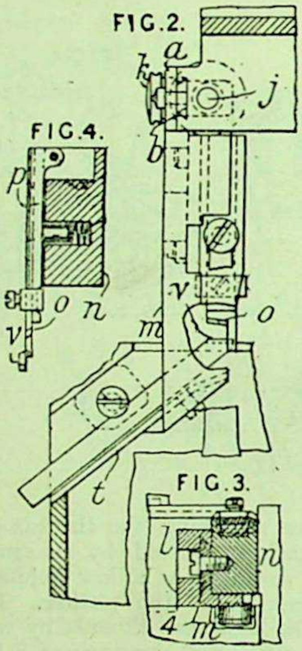
FIG. 5.



23,145. Klemm, H. A. Dec. 18.

Sewing-machines, trimming or cutting in.—Relates to a trimming-attachment, in which the cutters are carried by a bracket detachably connected to the overhanging arm of the machine. The bracket *a* is carried by a rib *b* sliding in a groove in the head and adjustable to vary the distance of the cutter from the stitching by means of a screw *j* engaging a lug on the rib. A screw *k* clamps the bracket when adjusted. From the bracket *a* depends an angle plate *l*, *m*, in which slides a block *n* retained by a rib 4, and having pivoted to it a bar *p*, Fig. 4, to which is attached the cutter *o*. The side *m* of the angle plate is continued below the work-plate, and carries the fixed cutter *v* and a chute *t* for the cuttings. The cutter *o* is operated from an eccentric on the lower shaft connected with the block *n*.

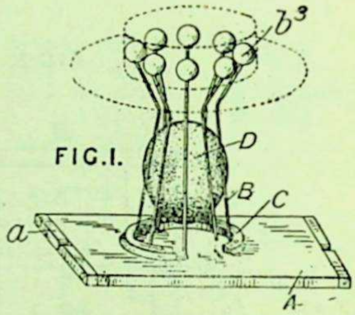
FIG. 2. FIG. 4. FIG. 3.



23,609. Dowie, E. Dec. 24.

Sewing, work-holders for.—Work-stands or lap tables for trimming or lining hats consist of a base or table A having folding legs *a*, which can be turned down to engage with the knees when the device is placed on the lap, and of wires B having suitable cranked or looped ends for engagement in slits or recesses and grooves in the base, being secured thereon by a ring C or the like. The wires are bent outwards at the top and terminate in balls b^3 for engagement with the hats either on the inside or the outside, the diameter of the circle formed by the wires being regulated by a rubber ball D.

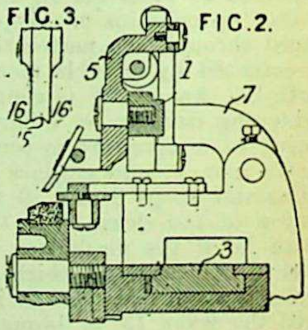
FIG. I.



23,793. Boult, A. J., [*Goodyear Shoe Machinery Co.*]. Dec. 29.

Separating and indenting stitches.—Consists of an improved tool for stitch-finishing machines, in which the tool is drawn lightly over the work, and automatically located by engagement with the stitches. The tool has a groove 15, which shapes the crowns of the stitches, and edges 16 which indent the work, and its position is controlled by the crowns of the stitches and not by the spaces between them. The tool is described as used in a machine of well-known type, in which the tool-holder 5 is pivoted to a lever 1 pivoted to a slide 3, this lever 1 being depressed after the tool is in position by a lever 7.

FIG. 3. FIG. 2.



23,900. Neubauer, C. B. Dec. 31.

Embroidery.—Consists of a combined thread-testing and stop gear, for stopping shuttle embroidering-machines on the breaking of a thread. Each needle thread *a* passes through a separate yoke *s*, which it thus supports above the poles of an electromagnet *b*. When the take-up acts, the magnets are energized, and the threads strained. If a thread then breaks, its yoke *s* drops across two pins *i*, and completes the belt-shifter circuit *g*. The circuits *d* and *g* are intermittently made and broken by means of a cam lever *y*. The belt-fork rod *p* is formed with a slanting slot, in which one end of a lever *h* engages. A weight *q*, connected to the lever *h*, tends to shift the belt on to the loose pulley, but is normally prevented from doing so by the latch lever *k*, under control of a magnet in the circuit *g*.

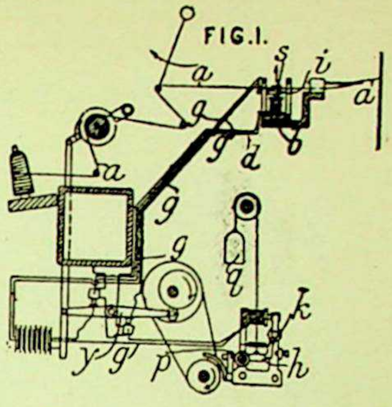


FIG. I.

APPENDIX.

A.D. 1897.

10,998. Ganswindt, H. May 3.

Sewing-machines, driving.—In a ratchet driving gear for sewing-machines or other purposes, a belt, rope, or chain *i*, actuated by a treadle or otherwise, gives an intermittent forward motion to the driving-drum *h*; the spiral spring *s*, attached at one end to the drum and at the other to the fixed shaft b^1, effects the return. The motion is communicated to the driven shaft *a* through a ratchet-wheel *d*, keyed to the shaft, and pawls *o* sliding radially in sockets in the arms *k* of the drum *h*. Springs *n* hold the pawls in engagement with the ratchet during the forward stroke. When the drum *h* reverses, the projecting fold s^1 of the spring *s* engages the pins *q* attached to the pawls, and withdraws them from the ratchet, thus avoiding friction in the return stroke. The pawls may also be arranged to be withdrawn by gravity, or by a separate spring. The drum *h* and the ratchet-wheel *d* turn on ball bearings on the shaft b^1, which may also be made in the form of a sleeve, the shaft *a* being continued through it.

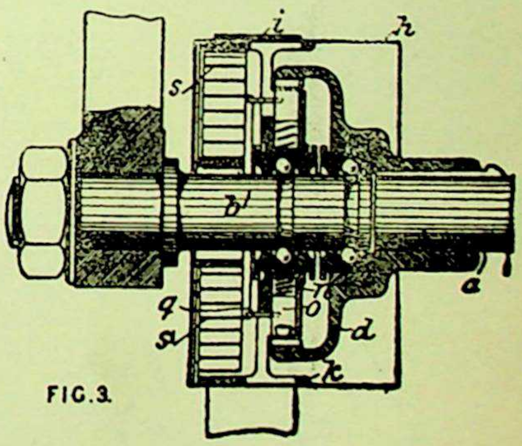


FIG. 3.

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